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THE FAMILY DOCTOR AND THE CHANGING ORDER

PRESIDENT'S ADDRESS

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DES MOINES, IOWA

In assuming the office of President I feel a deep sense of humility and keen appreciation of the responsibility entailed in following the distinguished teacher and surgeon who preceded me as well as the long roll of noted leaders in American medicine who have graced this high station.

I have been impressed with the wisdom of having a year of training as president-elect and the opportunity offered of gaining a closer familiarity with the administrative affairs of our great association. I wish it were possible to give a vivid portrayal of the extent and the comprehensive character of its activities.

The Board of Trustees has prepared this year a motion picture, which will serve to illustrate the magnitude of the physical plant and likewise permit a wider conception by the membership of the loyalty, integrity and scientific ideals of the administrative and editorial officers in maintaining their stewardship. Through the medium of THE JOURNAL, published weekly, and eight or more special monthly publications, there are brought to the members all new discoveries pertaining to the causes, diagnosis and treatment of disease throughout the world. The Association further exercises its particular educational function in making available for the general practitioner and the specialist every phase of medical progress so essential for the continuing development of the experienced physician.

By means of the Council on Medical Education and Hospitals and the various bureaus, the members are kept conversant with the advancement in methods of medical training and the different forms of licensing procedures, as well as those changes in the social order that affect the interests of the individual physician.

As members of an age-old guild, we are governed in our rules of conduct largely by tradition. Medical knowledge as we know it today is not of recent origin but rather the assembled facts of many treasured traditions, the impress of the master on disciple and student by the written or the spoken word through succeeding generations.

As history is simply the biography of the mind of man, so is the medical knowledge of our day but the sequence of epochal events, each new discovery forming the basis of a new truth to follow. Again, the development and growth of this knowledge has always been intimately related to the type of medical education and practice of the art prevailing in each particular period of organized society.

While we treasure the rich heritage that runs back into the sources of the past, we have come to recognize that much of the old has passed away. A changing order is bringing new problems into the practice of medicine such as it has not encountered before. Therefore the time has come to look forward and try to read the days ahead in the light of what has happened in the past.

Since the turn of the century man's environment has changed, largely as the result of the expansion of his control over physical forces, as in the growth of speed, the elimination of time and space, and the enlargement of the dominion of man's skill and knowledge. This new environment has however not produced a new society, and in some respects the individual units of society have not kept pace with the changing world. Nevertheless the thoughts and interests of society are closely concerned with the striking changes that are taking place in the forms of medical and nursing service, particularly as to its availability and cost.

The increasing interest in matters medical on the part of modern society is the result of a long process of public education by various agencies, in which our association has taken a leading part.

Through the medium of radio broadcasting, special publications, public lectures, the efforts of various speakers' bureaus, operating through national, state and affiliated medical organizations in conjunction with various governmental agencies, interwoven with boards of education, public health services, children's bureaus, hospitals and scores of other units, there has become fixed in the public mind such things as the importance of well being, why and when to call a doctor, child health and the rearing of children, preventive medicine in its several forms, the control of tuberculosis, heart disease and cancer, as well as much sound advice as to diet, and general rules of hygiene.

As a consequence of this form of public instruction society is thinking about medicine, particularly in the field of constructive health, as it has never thought before, which has resulted in a fast enlarging body of well informed people of better discernment as to what is required in the way of medical service.

THE FAMILY DOCTOR OF THE FUTURE

A new sort of clientele is emerging for the doctor of the future that will call for all the social and intellectual adaptability at his command. In this new order of society there is a call for a different type of family doctor or general practitioner than was required a generation ago. Although of somewhat different mold, he will be the central figure in the field of medical prac-

President's address before the American Medical Association at the Eighty-Fifth Annual Session, Cleveland, June 12, 1934.

tice as in the ages past. He is the basic doctor of tomorrow and of the new order. It is for him that medical faculties will be enlarged, courses of study extended and physical equipment utilized to the highest degree. He will approach the threshold of medicine with a broad cultural training in the natural sciences and the humanities, so that he can read aright the faults of heredity and the laws of eugenics, to interpret more readily the problems underlying the biologic delinquencies which constitute the greatest burden of modern society.

For further training in the basic medical sciences and the clinical art of diagnosis and treatment of disease, this country affords ample facilities in medical schools and teaching hospitals. The future curriculum will however place special emphasis on clinical instruction in preparation for the broad field of general practice. For him diagnosis will constitute an intellectual accomplishment rather than the application of numerous instrumental aids or laboratory conclusions. The thorough preparation of the family doctor will therefore entail an added responsibility on the medical faculties of the future. Aside from his higher medical attainments, he will be a man of broad vision, calm judgment with the human touch, and a full appreciation of the needs of the individual patient.

In the general field of preventive medicine there will be ample opportunity for his art. Governmental health agencies are concerned largely with the community control of infectious diseases as they occur in smaller or larger epidemic form, but the family doctor will have his opportunity as individual health adviser, particularly in connection with the various preventive and immunizing procedures to protect the child and the adult from the different diseases of infectious nature.

A much wider field of service is encompassed in the early recognition and possible control of the organic disorders, such as the diseases of the blood, heart and blood vessels, the kidneys, the digestive tract and the nervous system.

The symptoms of fatigue, loss of weight, shortness of breath, pain with ordinary physical effort, impaired appetite, backache, moderate disturbances in kidney function, cough, dizziness and headache will have a special meaning to the family medical adviser with his knowledge of personal habits, familial tendencies and environmental conditions, and the further ability to investigate thoroughly the significance of such minor symptoms. It must be equally manifest that in any campaign for the control of cancer the family doctor will have a very important function. The intelligent advice that he will be able to give in acute or chronic conditions requiring surgical treatment, as well as faithful association with the operating surgeon in the further care of the patient, will be of inestimable service and comfort to all concerned.

The constant increase of mental disease is one of the major economic and social problems of this day. Some idea of the magnitude of the problem may be gained when it is stated that the number of new commitments to institutions for mental disease has almost paralleled the increase in matriculation in the colleges of the country. Most mental patients have a long history with symptoms appearing years before the real condition is manifest. The hope of dealing with the problem lies in early diagnosis in general practice and appropriate direction and treatment of each condition.

One of the important functions of the future family doctor will be concerned with the maintenance of health of his people, thus serving them as a faithful adviser during the state of well being as well as when they are ill. Periodic health examinations will be an important part of his practice, although the initial stage of enthusiasm for such examinations seems to have waned some in recent years. Quite recently the Massachusetts State Medical Society challenged the necessity for annual examinations, characterizing them as a luxury and maintaining that "universal investigation of recently acquired trivial signs and symptoms by the family doctor would be more profitable than the periodic health examination." We all appreciate that the individual with a backache or a headache will probably seek a medical examination more readily than when no such complaint is manifest.

The liberal qualifications prescribed for the family doctor of the new order would seem to correspond to the well trained internist or pediatrician and to a certain extent such a comparison is well applied. Emergency surgical treatment may also be a part of his function.

Although the family doctor or general practitioner will maintain a slightly different rôle from what he had in the past, he will continue to occupy the center of the medical stage and by reason of his broad medical training will be perfectly competent to take care of 85 per cent of general medical practice, besides being equally competent to know when, where and how to seek advice and aid in the other 15 per cent. He will likewise be the integrating force, the coordinator in establishing relations with the specialist in the best interest of the patient.

SPECIALISM IN THE FUTURE

The number of specialists may be somewhat more limited in the future, but they will be distinctly of a higher order. The specialist in any particular field from now on must furnish qualifications that have passed the scrutiny of his peers.

Special boards of examiners are established in the specialties of ophthalmology, otorhinolaryngology, obstetrics and gynecology, dermatology, pediatrics and radiology. A number of other specialties will probably organize similar boards in the near future. Last February a national advisory board of the medical specialties was formed, having for its purpose to coordinate and unify the qualifying methods of the constituent specialty boards. Hereafter the names of qualified specialists who have been properly certified by their respective examining board will be submitted to the Council on Medical Education and Hospitals for endorsement and publication as such in the Directory of the American Medical Association. The value of such certification for the public welfare and the profession will be generally recognized.

The family doctor as he has been portrayed, and the highly qualified specialist will be the medical pioneers of tomorrow and are destined to preserve the highest traditions of our guild. As we view with some satisfaction the outlook for the practice of medicine in the changing order, we are faced at the threshold with the same problem that is giving so much concern to the medical economists of this day. Thoughtful observers have recognized that doctors are being trained without any consideration of possible consumer requirements and beyond the limit that society can adequately support.

NEW PROBLEMS

Changing social and economic conditions will continue to influence the practice of medicine, and aside from those previously mentioned there are further factors that will have an important bearing on the medical practice of the future.

There are now no more frontiers. Country life is disappearing, and the existence of our people is changing from a rural life to essentially a city and suburban existence. The general population is not increasing as formerly; in fact there is every indication that by the year 1960 the birth rate and death rate will have reached a balance. As a result fewer children will be born and fewer will die in childhood. Furthermore a greater number of persons will live beyond former limits and succumb to those diseases incident to the aging process and the degenerative changes of later life. Certain diseases, as typhoid, malaria, smallpox and diphtheria, are much less frequent than formerly and are likely to become less so in the future. It may logically be assumed that during the next generation the family doctor or general practitioner is going to be mainly concerned with problems of nutrition and infectious diseases in the young, the metabolic disorders and hazards of industry in the adult, and the degenerative diseases peculiar to the old.

During the past year and a half the Bureau of Medical Economics of the Association has conducted a careful survey with regard to the distribution of physicians in the United States. When this is completed a more definite determination as to the actual ratio of physicians to population in different areas will be available. Nevertheless, when considered in the light of present acute problems of the practitioner and the facts concerned with the future practice of medicine one is forced to the conviction that more doctors are being turned out than society needs and can comfortably reward. In the recent State Board number of THE JOURNAL an editorial statement was made that, in 1933, 5,012 new members were added to the medical profession in the United States through licensure, while the losses by death for the same period were approximately 3,500. The net gain of 1,500 is about 1 per cent of the number of physicians actually practicing in the United States.

The census of 1930 shows an increase in population during the preceding decade of 6 per cent, or an annual rate of increase in population of something less than 0.6 per cent.

With the pendulum swinging toward a balanced population, it will be clearly evident that the time is coming, and not far distant, when the principal function of medical service can be effectively furnished by half the number of medical graduates that we now have.

According to the report of the Commission on Medical Education, the United States has more physicians per unit of population than any other country in the world, and twice as many as the leading countries of Europe. With a total of 156,440 licensed physicians in the United States at the present time, there is one for every 780 persons. England has one doctor for 1,490 persons, France has one for 1,690, and Sweden has one for 2,890.

"It is estimated that a reasonably complete medical care can be provided in this country on the basis of one physician to about 1,200 persons; that an adequate medical service for the United States could probably be provided by about 120,000 active physicians. According to these figures there are at present a surplus of approximately 35,000 physicians.

"If the present rate of supply is continued, the number of physicians in excess of indicated needs will increase. By actuarial calculations it is estimated that by 1940 there will be in round numbers 171,700 physicians, and in 1980 about 211,800. The number of persons per physician in 1940 will be 760, in 1960 about 730, and in 1980 about 690."

It requires no special actuarial philosophy to forecast what such a state will mean to the economic welfare of the future practitioner.

It is only natural to place the responsibility with the medical schools, in that they hold in their hands the power to control the supply of physicians for the future, but the time has arrived for the American Medical Association to take the initiative and point the way. During the coming year the Association, through the Council on Medical Education and Hospitals, will institute a resurvey of the medical schools of this country. Whether the problems of this new day in medicine will be met by a limitation in the number of existing institutions or the number of students admitted cannot be foretold, but it will require real courage and tenacity to bend the educational processes to the urgent social and economic needs of the changing order. A fine piece of educational work could well be done if we were to use only one half of the seventy-odd medical schools in the United States.

It will be claimed that to close educational doors of any kind to ambitious youth is undemocratic and un-American; that, if a young man or woman wants to study medicine and can pass the necessary examinations, he or she should be free to do so. Yet, if I read the signs aright, the truly democratic process will be to take thought about the good of the whole, and less about the special satisfaction of the few. In one of the enlightened democracies of the old world, Sweden, this is being successfully accomplished. It will also be argued that in a democracy of forty-eight states the control of the number of physicians to be licensed is the prerogative of the individual state. A precedent has however been established by our neighbor to the north in the province of Alberta, where legislation was recently adopted that no more physicians will be registered in the province until the proportion has risen to 1 for 1,200 of population.

The present system opens the responsibilities of medical service not only to a larger number than can support themselves properly but to many who have not the basic qualifications for the study and practice of medicine.

The wise selection of fewer students can well be left to the educational faculties. It is now well recognized that the yardstick of basic qualifications is not confined to academic grades, for it is more important and fundamental that the prospective medical student have those attributes of personality characterized by an alert imaginative mind, physical and moral vitality, honesty, loyalty, resourcefulness and adaptability. He must be the kind of person who can deal effectively with sick lives as well as damaged organs or impaired physiology.

Much of the present unrest and anxious emotion about state and socialized medicine is the result of economic fear and uncertainty and in large part due to the social dangers that have developed as the result of an overcrowded and ill distributed body of doctors.

At a recent Medical College Centenary occasion in the state of Ohio, a leading educator and medical school administrator made this problem of an oversupply of medical graduates the theme of his address and sounded an urgent academic appeal for concerted action to meet the challenge of the changing order.

If the educational forces will respond to this clarion call in sympathetic and active cooperation with the American Medical Association, its constituent membership and the licensing bodies of each state, we shall once more have put our own house in order and a new day will dawn in American medicine. In the spirit of this enlightened sentiment we may then approach the coming day in fullest confidence that the cultured family adviser will come again to his high estate and the idealism of medical service exemplify the labors of the doctor as in the ages past.

We may likewise entertain the hope that those who follow can justly say in the words of the old Scot, "they caught the 'gleam' an' followed it."

Again, if we follow the lamp that appears to light the way, it will but confirm the prophetic words of the French philosopher René Descartes, spoken more than three hundred years ago: "If ever the human race is lifted to its highest practicable level, intellectually, morally and physically, the medical profession will perform that service."

DURATION OF IMMUNITY FOLLOWING VACCINATION AGAINST SMALLPOX

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It is still the traditional belief that the protective effects of vaccination last about seven years. The basis of this dictum lies in the observation that immunity to smallpox wears off in some individuals, and the magic number seven has been taken as the time to revaccinate. In the earlier studies on revaccination, results were recorded as successful, "a take," or unsuccessful, "no take." In the latter case the inference was drawn that the person was immune. This does not necessarily follow.

In the light of present knowledge, the reaction on revaccination is classed as immediate, accelerated or primary, depending on the period of incubation, the height of the reaction and the course of events. The immediate reaction indicates immunity, the accelerated reaction partial immunity, and the primary reaction that immunity has worn off. Jenner knew of the reaction now called immediate and described it as occurring when variolous matter is inserted into the skin of persons who have had a prior attack of smallpox or have been vaccinated. The immediate reaction is usually so slight, however, that it was overlooked during the greater part of the nineteenth century.

In the earlier literature on this subject many revaccinations were reported as unsuccessful which, it is now known, must have been immediate reactions. The data collected before the immediate reaction was recorded therefore need revaluation.

In our experience, all individuals properly vaccinated exhibit a take. We have seen no exception. Failure to take indicates an inactive virus, no insertion, or some other fault in technic. In other words, the individual was not really vaccinated.

The initial vaccination results in the classic primary take with the three-day incubation period, the three-day papular, the three-day vesicular and the three-day pustular stages succeeding with great regularity. The height is reached about the twelfth day, followed by crusting and leaving a typical scar. If the individual has been vaccinated before, the reaction is usually modified. The modified reactions are classified as either immediate or accelerated and indicate that the subject has retained some immunity from his previous experience. The immediate reaction indicates a high degree of immunity, whereas the accelerated reaction indicates that the immunity has in part worn off. Finally, as second attacks of smallpox occur in the rare individual, so also may a subject lose his immunity to cowpox and exhibit all the manifestations of a primary take on revaccination.

We have been struck, however, by the rarity of a primary take on revaccination. If immunity lasts only from seven to ten years, there should be many primary takes after this interval. Such is not the case. In vaccinating medical students it is rare to find a primary take for teaching purposes, even though previous vaccination was done as much as twenty years before. In short, observations suggest that in the great majority of cases immunity to vaccinia lasts a great deal longer than has been commonly thought.

In examining this point, we have studied the records of the students in the classes in preventive medicine in the Harvard Medical School and in epidemiology in the Harvard School of Public Health. As a class exercise, the students vaccinate each other under supervision with the regular stock vaccine in capillary tubes, prepared by the Antitoxin and Vaccine Laboratory of the State Department of Public Health of Massachusetts. Each student makes a written report of the course of his reaction and of his previous vaccination history.

During the last three years, in observation of more than 400 vaccinations, we have seen only five primary takes; two of these were in students who had had smallpox in childhood but had never been vaccinated. Of the remaining three, one reported four prior unsuccessful vaccinations, one had been vaccinated over twenty years previously, and the third had been vaccinated only two years before. The last is an example of the very occasional individual who seems to maintain little or no immunity to cowpox, indicating that he might have had two attacks of smallpox if exposed.

In addition to the data collected during the past three years, we have records submitted at the time by the classes of 1916, 1919, 1920 and 1924. From the individual reports of these seven classes, we have tabulated the data on the types of reaction which occurred, with relation to the time that elapsed since the last previous vaccination.

The character of the eruption and the time of reaching its height were used as criteria, because they were more definite than the period of incubation. Reactions were classed as immediate if they remained papular throughout the course, or if they reached their height within seventy-two hours. The takes were classed as accelerated if a vesicle developed and if they reached their height between the fourth and ninth days. Reactions were classed as primary if they reached their height the tenth day or later. There was little tendency

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for overlapping of accelerated and primary reactions; in all but one or two cases, the height was reached on the eighth day or earlier, or else on the eleventh or twelfth day. There was slightly more tendency for merging between accelerated and immediate reactions, but again the great majority fell definitely into one or the other category.

TABLE 1.—*Results of Vaccination After One Prior Vaccination*

Years Since Last Previous Vaccination	Year	Totals	Type of Reaction: Immediate		Accelerated		Primary		Comment
			Number	Per Cent	Number	Per Cent	Number	Per Cent	
Under 5	1933	0	..	....	..	..	..	..	
	1932	6	6	100	..	..	..	..	
	1931	6	6	100	1	17	..	..	
	1930	0	..	....	..	..	..	..	
	1929	4	4	100	..	..	..	..	
	1928	6	5	83	..	..	1	17	
	1927	5	5	100	..	..	..	..	
Total under 5.....		27	26	96	1	4.0	1	4.0	
5 to 9	1932	1	1	100	..	..	..	..	1932 to 1924, 1 with 9, or 100 per cent, immediate
	1929	3	3	100	1	33	..	..	
	1928	5	5	100	..	..	..	..	
	1927	2	1	50	1	50	..	..	
	1926	7	7	100	..	..	..	..	1931 to 1922, 14—all immediate
	1925	4	4	100	..	..	..	..	
	1924	4	4	100	..	..	..	..	
Total 5 to 9.....		26	25	96	2	8	..	..	
10 to 19	1932	23	21	91	10	43	1	4	1932 to 1924, 72 with 19, or 69 per cent, immediate
	1929	19	14	74	5	26	..	..	
	1928	21	9	43	7	33	5	24	
	1927	9	3	33	6	67	..	..	
	1926	22	19	86	8	36	..	..	1931 to 1922, 22 with 22, or 100 per cent, immediate
	1925	18	14	78	4	22	..	..	
	1924	14	9	64	5	36	..	..	
Total 10 to 19.....		126	89	64	35	21	6	5	
20 and over	1932	4	3	75	3	75	..	..	1932 to 1924, 23 with 23, or 92 per cent, immediate
	1929	4	1	25	3	75	..	..	
	1928	13	8	62	3	23	2	15	
	1924	5	3	60	2	40	1	20	
	1933	8	8	67	1	33	..	..	1931 to 1923, 21 with 21, or 100 per cent, immediate
	1931	12	9	69	1	33	..	..	
	1923	6	6	100	..	..	..	..	
Total 20 or more...		47	32	68	14	25	3	7	

It is of considerable interest that, even in medical students on the lookout for reactions, the small papule of the immediate reaction was often unnoticed until attention was called to it by itching. Many reactions were so slight that they were overlooked completely, and the student reported "no take" until the instructor pointed out the characteristic papule. Small wonder that the reaction was overlooked for almost a hundred years!

In tabulating the data, we have grouped the cases according to whether the last previous vaccination was less than five, from five to nine, from ten to nineteen, or twenty or more years ago. The reactions in individuals who had had only one prior vaccination are recorded in table 1. The persons who had had two or more vaccinations prior to the class exercise are tabulated in table 2. The two groups were separated thus to discover whether the number of previous vaccinations had any effect on the duration and degree of immunity following the last vaccination. In the two tables the data from each of the seven student classes are recorded separately to show both the variations that occur and the essential consistency of the observations from year to year. Table 3 summarizes the facts.

Of the 557 revaccinations, only eleven, or 2 per cent, gave primary takes. Of these primary reactions, ten appeared on the second vaccination (table 1) and only one after two or more previous vaccinations (table 2).

This distribution suggests that there is less chance of a primary take if the subject had been previously vaccinated twice or more. Seven of the ten primaries on second vaccination, however, occurred in 1920. There were five among twenty-one vaccinations in the ten to nineteen years group and two among thirteen cases twenty or more years after first vaccination. This indicates an abnormal distribution in 1920, since no other such figure appears in our series (table 1). Only one primary take appeared less than five years after initial vaccination (table 1) and the rest after ten or more years had elapsed.

With regard to the distribution of immediate and accelerated reactions, the two groups (tables 1 and 2) are entirely consistent within the limits of chance variation. Also, the percentage of immediate reactions decreases from above 90 within five years to under 70 after twenty years. Conversely, the percentage of accelerated reactions increases from below 5 to about 25 in the same time interval between vaccinations. We again call attention to the essential consistency of the figures; where the discrepancies appear large, as in table 1, class of 1924, ten to nineteen years group, the figures are small: nine cases in this instance.

Examination of the data on immediate and accelerated reactions ten years or more after prior vaccination

TABLE 2.—*Results of Vaccination After Two or More Prior Vaccinations*

Years Since Last Previous Vaccination	Year	Totals	Type of Reaction: Immediate		Accelerated		Primary		Comment
			Number	Per Cent	Number	Per Cent	Number	Per Cent	
Under 5	1933	0	0	100	..	..	..	..	
	1932	23	23	100	1	4	..	..	
	1931	25	24	96	1	4	..	..	
	1930	7	7	100	1	14	..	..	
	1929	24	24	100	..	..	..	..	
	1928	27	27	100	..	..	..	..	
	1927	24	24	100	..	..	..	..	
Total under 5.....		130	130	99	3	1	..	..	
5 to 9	1932	0	0	100	1	17	..	..	1932 to 1924, 29 with 31, or 97 per cent, immediate
	1929	5	4	80	1	20	..	..	
	1928	32	32	100	0	11	..	..	
	1927	18	17	94	1	6	..	..	1931 to 1923, 43 with 43, or 98 per cent, immediate
	1926	6	6	100	..	..	..	..	
	1925	14	14	98	2	17	..	..	
Total 5 to 9.....		81	73	95	9	12	..	..	
10 to 19	1932	10	7	94	6	46	..	..	1932 to 1924, 27 with 31, or 87 per cent, immediate
	1929	6	4	69	3	33	..	..	
	1928	9	6	67	3	33	..	..	
	1924	7	6	71	2	29	..	..	
	1931	6	6	69	1	17	..	..	1931 to 1923, 23 with 31, or 92 per cent, immediate
	1923	3	3	100	..	..	..	..	
	1922	2	2	100	..	..	..	..	
Total 10 to 19.....		44	36	75	12	27	..	..	
20 and over	1932	0	..	....	..	..	..	..	
	1929	3	1	100	..	..	..	..	
	1928	0	..	....	..	..	..	..	
	1924	0	..	....	..	..	..	..	
	1931	1	1	100	..	..	..	..	
	1923	1	..	....	1	50	1	50	
Total over 20.....		5	2	60	1	20	1	20	

shows an interesting change during the period of time covered by our data (comment in tables 1 and 2). In the earlier years 1916, 1919, 1920 and 1924 the percentage of immediate reactions ten years or more after prior vaccination is definitely lower than in the later period from 1931 to 1933. Conversely, there are more accelerated reactions. For example, the earlier period in table 1, ten to nineteen years group, shows seventy-two vaccinations with only 53 per cent immediate,

whereas the later years show fifty-two vaccinations with 88 per cent immediate. This confirms an impression that accelerated reactions were more frequently seen then than now. This may very well have resulted from the change in technic during this time. Extensive insertions, 1½ inches (3.8 cm.) or more in length, were formerly insisted on in the belief that large takes gave better immunity. It is now known, however, that small insertions, not over one-eighth inch (0.32 cm.) long, give satisfactory immunity with the minimum of inconvenience to the subject.

TABLE 3.—*Results of Revaccination—Summary of Tables 1 and 2*

Years Since Last Previous Vaccination	Totals	Type of Reaction: Immediate Number	Immediate Per Cent	Accelerated Number	Accelerated Per Cent	Primary Number	Primary Per Cent
Under 5	221	213	96	4	1.8	1	0.4
5 to 9	326	315	99	11	3.3	..	..
Total under 10	547	521	95	15	4.7	1	0.3
10 to 19	169	112	67	50	29	6	4
20 and more	81	35	67	13	25	4	8
Total 10 or more	250	147	67	63	29	10	4
Total	697	668	84	78	14	11	2

In the course of these studies we encountered nine students with a history of smallpox, attested in each case by the telltale pockmarks. These are recorded separately because the students had never been vaccinated (table 4). Only one gave an immediate reaction, and four of them gave primary takes. This confirms a similar observation made by one of us[1] at Eagle Pass in 1895, that individuals vaccinated shortly after recovery from smallpox often gave primary takes.

It is of interest for control purposes to add that in each year the potency of the virus was indicated by the occurrence of at least one primary take in the class. These do not all appear in the tables, because some individuals had never been successfully vaccinated before. This control is desirable because of the fact that "immediate" reactions can be elicited with heated or otherwise inactivated virus.[2]

TABLE 4.—*Vaccination Following Smallpox*

Years Since Attack of Smallpox	Totals	Type of Reaction: Immediate Number	Immediate Per Cent	Accelerated Number	Accelerated Per Cent	Primary Number	Primary Per Cent
5 to 9	2	..	..	1	50	1	50
10 to 19	4	1	25	2	50	1	25
20 and over	3	..	..	1	33	2	67
Total	9	1	11	4	44.5	4	44.5

SUMMARY AND CONCLUSIONS

The duration of immunity to smallpox as indicated by the results of vaccination was studied in 557 medical students who had previously been vaccinated and in nine who had never been vaccinated but who had had smallpox. Of 337 students vaccinated ten years or less after previous vaccination, only one gave a primary take, fifteen, or 4.7 per cent, gave accelerated takes, and 321, or 95 per cent, an immediate reaction. Of the 168 students vaccinated from ten to nineteen years before, only six, or 4 per cent, gave primary takes, fifty, or 29 per cent, gave accelerated takes, and 112, or 67 per cent, immediate reactions. After twenty years, of fifty-two reactions, thirty-five, or 67 per cent, were immediate, thirteen, or 25 per cent, were accelerated, and 8 per cent gave primary takes.

It is welcome news that immunity conferred by a single vaccination usually lasts longer than the traditional seven to ten years, and that the benefits conferred extend for twenty years or more in most individuals. Revaccination reinforces protection and, as our records here presented show, is usually a mild experience. Certainly nothing in these facts should alter the procedure of always vaccinating when exposed or in danger of exposure to smallpox.

The situation with reference to smallpox is interesting. Vaccination of nine individuals with a history of smallpox who had never been vaccinated gave four primary takes, four accelerated takes and only one immediate reaction. Experience teaches that smallpox usually protects against itself; second attacks are rare. It does not, however, protect so well against cowpox, as our data show. On the other hand, experience in every epidemic of smallpox in which vaccinated individuals were exposed has demonstrated the powerful specific protection afforded by vaccination.

1. Rosenau, M. J.: Report of the Surgeon General, U. S. Pub. Health Service, 1895.
2. Andervont, H. B., and Rosenau, M. J.: J. Immunol. 28:31 (Jan.) 1935.

BERIBERI FOLLOWING DRASTIC VOLUNTARY DIETARY RESTRICTION

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Beriberi is looked on as a tropical or exotic disease, but the conditions that are alleged to give rise to it may conceivably occur elsewhere. A few instances have been encountered in badly run prisons and insane asylums, but sporadic cases are on the whole sufficiently rare, in this locality at least, to justify us in placing two on record.

Beriberi is a vitamin B deficiency disease characterized by cardiovascular changes, edema and polyneuritis. Historically it is a very ancient malady. It appears in Chinese writings of the Sui and Tang dynasties at the beginning of the seventh century. A description dating back to 610 A. D. is clear enought to indicate that a moist and a dry form of the disease were then recognized just as is the case today. Under the name of kakke the malady makes its appearance in Japanese literature in the ninth century. The first indubitable descriptions are, however, not found before the seventeenth century. An early account by a European was written by Malcolmson in 1835. About the middle of the nineteenth century the publications multiplied rapidly, largely by reason of work by Europeans studying the problem in Asia both on the mainland and in Japan and on the islands of the Straits and in the Philippines. The disease was a great scourge in the armies during the Sino-Japanese War (1894-1895), occurring in 17.56 per cent of the troops, and in the Russo-Japanese War (1904-1905), in 16 per cent. One fourth of all hospitalized soldiers had the disease.

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Early writers believed that beriberi was caused by an infective agent, but in 1895 Eijkman [1] made experiments that not only resulted in clearing up the cause of beriberi but threw a flood of light on the whole subject of deficiency diseases. He fed hens nothing but polished rice and produced polyneuritis, exhaustion and death, while a diet of rice and barley or of only half polished rice prevented the disease. Between 1900 and 1910 proof was definitely brought forth that beriberi was a nutritional disease. Fraser and Stanton in 1910-1911 showed that beriberi could be prevented among the natives of the Malay peninsula by a diet of parboiled rice and that it could be prevented under the same condition even when the men also received polished rice. Similar experiments were made by Chamberlain, Vedder and their associates in the Philippine Islands. A little later Takaki [2] succeeded in conquering beriberi in the Japanese navy by a change of ration.

The accessory food factor that is responsible for beriberi is the soluble antineuritic or B vitamin, which in nature is usually associated with a closely related substance called the antipellagra vitamin (B_2 or G). These water-soluble vitamins are contained in vegetables, fruits, milk, yeast, kidney, liver, brain and whole grain. Recent studies seem to indicate the possible existence of seven components in the B complex.[3]

Clinically, beriberi presents itself in two fairly distinct forms: one in which polyneuritis predominates, the other in which edema is the outstanding feature. In the former a differential diagnosis between beriberi and polyneuritis from other causes is sometimes required. The senior author many years ago called attention to the similarity between alcoholic multiple neuritis and the deficiency diseases. It is well known that steady drinkers in whom alcoholic multiple neuritis later develops rarely partake of an adequate amount or of a proper kind of food.

Edematous cases of beriberi can be distinguished by the fact that pressure on the calf muscles produces severe pain; it has also been noticed that beriberi patients have difficulty in rising from a squatting position. If the diagnosis proves doubtful, the therapeutic test may decide. Under the specific therapy, the administration of foods that contain vitamin B, beriberi patients promptly recover.

Nutritional or war edema is allied to beriberi in that it is also a deficiency disease. It results from living on a diet containing too little protein and an excess of fluid and salt. Polyneuritis is not common in war edema. Some cases of war edema are probably due to an acute glomerulonephritis.

Patients with beriberi, as in our own first case, usually complain of dyspepsia. They seldom have spontaneous pain but they lose all appetite, acquire a loathing for food and have a sense of fulness in the stomach which in the more severe cases may pass into nausea and vomiting. The first characteristic symptom as a rule seems to be weakness in the legs; later a moderate edema, paralysis of the legs and general nervous disturbances such as irritability, headache and dizziness are added. Changes in the skin in the form of hemorrhagic exudates often appear. Fever is usually absent unless complications ensue. Palpitation on exertion and shortness of breath are present and become more marked as the disease progresses. The heart is usually enlarged, especially toward the right, but the edema is out of all proportion to the clinical evidence of cardiac changes during life. With respect to the changes in the heart, the recent studies of Wenckebach [4] are interesting. He found the right heart extraordinarily overfilled, the muscle being stretched and flattened out. These pathologic changes throw light on the sudden deaths that are so common in beriberi. The vascular symptoms often closely resemble those of aortic insufficiency.

E. W., our first patient, a white man, aged 76, married, retired from business, complained of greatly swollen, painful legs, and digestive disturbances. His father, mother, two brothers and three sisters had all died of old age. The patient had typhoid in infancy. When he was 23 he had a "heat stroke"; at that time he was given so many different kinds of medicine that ever since he has had stomach trouble for which he has seen many specialists in this and foreign countries. Gradually he eliminated one article of food after another, since nearly everything gave him a feeling of distress in the stomach, with belching of large amounts of gas.

About a year and a half before admission he became so ill that he discontinued all foods, except milk, of which he took about 3 quarts a day. As this caused diarrhea, he was forced to cut down the amount by one half. He grew progressively weaker and in August 1933 his legs began to swell. The swelling became more and more pronounced and eventually involved the face and hands. He was dizzy and extremely irritable and so weak that he had to be lifted from his bed to a chair. The greatly swollen legs were intensely painful and he screamed when they were touched. Eventually he became utterly helpless and could no longer leave the bed but lay with his swollen legs drawn up and supported by pillows under the knees. With difficulty he was induced to take a little milk but would take nothing else in the way of food. Somewhat later pruritus ani became very annoying, and he at last consented to see a physician. A skin specialist treated him without any relief. It was at this time that he was first seen by one of us (D.) and a week later by the other (R.). There were large ecchymotic spots on the legs and buttocks. The heart was enlarged to the right; the hands, face and legs were edematous; the calf muscles were extremely tender to touch. The man was visibly emaciated, extremely pale, mentally confused and very uncooperative. A diagnosis of beriberi was made. Only the persuasion of both of us finally broke the man's resistance against going to the hospital.

The blood count on admission showed less than 7.5 Gm. of hemoglobin, 2,150,000 red blood cells, 8,800 white blood cells with 82 per cent polymorphonuclears and 18 per cent small lymphocytes, with a marked shift to the left. The urine was concentrated, the color of dark straw, with a specific gravity of 1.017, acid, with no albumin or casts, and from 25 to 30 leukocytes per low power field.

Two blood transfusions of 250 cc. each on succeeding days were given. Because of the patient's unwillingness to cooperate and to take food, a Jutte tube was introduced through the nostril into the stomach and through it large quantities of vitamin B extract, orange juice, beef juice, egg, tomato juice and cod liver oil were administered for four days. The first day his intake was 134 ounces and the output 39 ounces. Large doses of iron and ammonium citrate were also given through the tube. On the fourth day he removed the tube himself and said he would eat whatever we gave him if he was permitted to go home. He ate puréed vegetables, raw liver pulp, cooked fruit and fruit juices and took the iron without any distress. He was allowed to go home. The blood count on discharge, October 18, showed: hemoglobin, 8.9 Gm.; red blood cells, 2,840,000; white blood cells, 3,630; polymorphonuclears, 61 per cent, and small lymphocytes, 39 per cent, with a marked shift to the left.

At home he continued to eat ravenously. A general diet was ordered, the vitamin B extract and iron and ammonium

1. Eijkman, C.: Virchows Arch. f. path. Anat. 148: 523, 1897.
2. Takaki, cited by Sherman, H. C., and Smith, S. L.: The Vitamins, ed. 2, New York, Chemical Catalog Company, Inc., 1931.
3. Kruse, H. D., and McCollum, E. V.: Review of the Recent Studies on the Antineuritic Vitamin, J. A. M. A. 98: 2001 (June 18) 1932.
4. Wenckebach, K. F.: Riddle of Beriberi-Heart, Libman Anniv. Vols. 2: 1199, 1932.

citrate being continued. The swelling subsided within two weeks and he was then allowed to get out of bed. Though he was still very weak, the pain in the calves of the legs had almost entirely disappeared and the ecchymotic spots were fading. He had no more indigestion. One month later, November 7, his blood count showed: hemoglobin, 9.5 Gm., or 61 per cent; red blood cells, 3,500,000; white blood cells, 4,300; polymorphonuclears, 56 per cent; small lymphocytes, 43 per cent, and eosinophils 10 per cent, with a marked shift to the left. He now walks outdoors unaided, is in a cheerful frame of mind and is interested in everything, for the first time in two years. He eats with relish all varieties of food without the slightest discomfort; he sleeps well and feels better than he has in years.

About a year ago Brauchle [5] reported an interesting case which is almost a replica of the foregoing. The patient, Dr. Brauchle's own mother, aged 60, began to have pain in the left hip. After about a year other symptoms were added, such as fatigue and tension in the muscles of the legs. These complaints were at first attributed to the menopause but treatment of every sort not only was of no avail but seemed to intensify the trouble. The woman had been largely a vegetarian all her life. After a year, fever and edema appeared; the patient's weight increased from 144 to 160 pounds (65.3 to 72.6 Kg.). Eventually the muscles became so weak that motion was virtually impossible and the only parts that could be moved were the mouth and eyes. One consultant attributed the symptoms to myositis; another attributed them to periarteritis nodosa but remarked casually that there was some resemblance to beriberi. It is interesting that the patient's mother had died at the age of 65 with practically identical symptoms. When she was almost moribund Dr. Bircher-Benner was called in and declared at once that the disease was the wet form of beriberi. He placed the patient on a diet or raw fruit, "musli," nuts and raw vegetables; bread, milk and cooked vegetables were totally forbidden. Under this treatment the edema rapidly disappeared. Her weight dropped from 160 to 120 pounds (72.6 to 54.4 Kg.); motion returned in the muscles and at the end of three years, the raw fruit being continued, the patient was able to walk any distance and to make long journeys. Dr. Brauchle and all who had seen the patient declared that her recovery was a miracle. In our case the recovery was no less striking.

An unusually interesting case is reported from the Philadelphia General Hospital by Kepler: [6]

A Negro woman, aged 28, had always been in good health. In August 1918 she had a miscarriage followed by severe vaginal bleeding. A friend recommended raw starch as a cure. Acting on this advice and later influenced by a superstition among Negroes that raw starch has cosmetic value and tends to make the skin white, she gradually ate more and more. At the end of two years this habit had increased to such an extent that she was consuming from 1 to 2 pounds daily of one of the box brands of gloss starch. Her husband had only one of his daily meals at home, and rather than cook for herself she obtained most of her nourishment from the starch. The cooked meal at night consisted of the usual staple articles of diet found on a workman's table. Under this regimen she lost her appetite and as a result she practically subsisted on laundry starch, which, so far as its vitamin content is concerned, is certainly the equivalent of decorticated rice. The hold that this habit had obtained on her can be realized from the fact that on several occasions after admission to the hospital she asked the nurses to smuggle starch to her. At the end of a little less than three years she began to have symptoms of polyneuritis, with a trifling edema of the buttocks. The heart was enlarged to the right and to the left and, despite the fact that there was no aortic diastolic murmur, the vascular signs were those of pronounced aortic insufficiency. As the patient also had nephritis, the primary treatment was directed toward that disease. After about ten days a diagnosis of beriberi was made and autolyzed yeast was given. A marked improvement followed. The urine became normal, various heart murmurs that had been present gradually vanished, and the pulsation of the peripheral arteries disappeared and the heart became normal in size.

A case of beriberi is reported by Swineford: [7]

A woman, aged 47, single, a native of Virginia, had a severe attack of typhoid and since then had never been entirely free from indigestion. To combat the abdominal pains she gradually reduced her diet to toast, soup, an occasional egg, corn meal, oatmeal and a rare helping of fish or chicken. She practically eliminated fruits, fresh milk, meat, peas, beets, potatoes and other vegetables from her diet. Gradually signs of polyneuritis developed; the legs became drawn up and the muscles of the calves and thigh exceedingly tender; even the bones were painful on light tapping. Alcohol could be ruled out as a cause of the symptoms. Under a high vitamin B diet the patient improved but did not fully recover.

Farnell and Yacovlev [8] call attention to the difficulty of distinguishing at times between pellagra and beriberi.

Wohl [9] reports a beriberi-like state in a diabetic woman, aged 32, whose diet had been improperly balanced. In considering cases of this type the thought comes to mind that perhaps the neuritis of diabetes has in it a deficiency factor.

A case of self-imposed avitaminosis partaking of the character both of scurvy and of beriberi has been reported by Bullowa.[10] A man, aged 55, Irish, a hotel porter in New York, had "taken a dislike" for meat and had lived for four and a half months on tea and bread. The result was a symptom complex suggesting both the lack of the antiscorbutic and the antiberiberi vitamins.

One of us (R.) has for several years been of the belief that some of the cardiac "breaks" seen in the poor patients entering the Philadelphia General Hospital since the depression are in part due to food privation and can be corrected only by proper nutrition. It is important to inquire in much greater detail than is the usual custom into the dietetic habits of patients. One may then perhaps learn that many common diseases, infectious and others, arise largely on the basis of faulty practices in eating.

Our second case was diagnosed as beriberi by one of us (R.) through consultation with the patient's physician, who described the results of his examinations:

A young woman, much overweight, in an effort to reduce her avoirdupois had adopted a meager and monotonous diet. After a few weeks she became short of breath and had palpitation and edema of the legs. These symptoms induced the belief among her medical attendants that she was suffering from heart disease. She had no rheumatic history, never had been ill with anything that could have given her heart disease and, prior to her voluntary dietary restriction, had been athletic and in the best of health. To my mind there was in this patient no primary cardiac trouble. The symptoms were those of a deficiency disease; in other words, it was the picture of the wet form of beriberi. Under a sensible dietetic regimen and that alone, the young woman made a prompt recovery.

5. Brauchle, Alfred: Med. Welt **7**: 34 (March 11) 1933.
6. Kepler, E. J.: Beriberi from a Diet of Raw Starch, J. A. M. A. **85**: 409 (Aug. 5) 1925.
7. Swineford, Oscar: Virginia M. J. **56**: 814 (March) 1930.
8. Farnell, F. J., and Yacovlev, P. J.: Ann. Clin. Med. **4**: 541 (Jan.) 1926.
9. Wohl, M. G.: Avitaminosis in the Course of Diabetes, J. A. M. A. **87**: 901 (Sept. 16) 1926.
10. Bullowa, J. G. M.: M. Clin. North America **10**: 959 (Jan.) 1927.

As long as fashion decrees the sylphlike figure, sporadic cases of beriberi are likely to occur. They may show only an incomplete picture of the disease but if the true cause of the symptoms is not recognized, the trouble may be ascribed to primary myocardial disease with inevitable failure of treatment.

The period of vitamin shortage that an individual may safely endure is variable, being influenced by several factors.[11] It is quite possible, although by no means proved, that the edema of wet beriberi is due to a shortage of protein. This would suggest a multiple deficiency in this type of the disease.

Of the sources of vitamin B for clinical use, yeast and wheat germ are the best. Liver, kidney and brain are richer than muscle in vitamin B. The whole grains, because of their content of germ, contain appreciable amounts in contrast to the highly milled products such as white flour and degerminated corn meal. Among the fruits and vegetables, tomatoes, raw cabbage, fresh spinach and legumes have been found to contain more than orange or lemon juice, onions, cauliflower or lettuce. The vitamin in the egg is located in the yolk. Milk, although a good source of the pellagra preventive substance, does not contain a large amount of vitamin B.

11. Cowgill, G. B.: Vitamin B, in Relation to the Clinic, J. A. M. A. **98**: 2282 (June 25) 1932.

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A MILK AND BANANA DIET FOR THE TREATMENT OF OBESITY

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During the course of certain studies on the comparative value of various carbohydrate foods, particularly cooked and uncooked fruits and vegetables, in the diet of patients with diabetes, it was observed that a diet of bananas and milk furnished a simple and effective method for weight reduction. The regimen has since been used by a considerable number of individuals suffering from simple obesity, and it is thought desirable to detail the method and the results obtained.

For the patient who is willing to make reasonable sacrifices to reduce excessive weight, the advantages of a simple, easily measured diet are quite obvious, provided it is well balanced from a nutritional standpoint and sufficiently palatable. Weight reduction usually involves the breaking of a habit that is firmly entrenched. Such a habit some persons find may be easily broken by a gradual process of "tapering off," as is involved in the usual curtailment of starches, sweets and fats; but many others find this very difficult. Among these, particularly, are those who are obliged to work with food, such as housewives, who prepare the family meals. For such persons, and it is believed that they constitute a large proportion of the total who seek relief, a strict regimen, resolutely adhered to over a definite period, furnishes the most practical method of attaining the desired end.

A most important requirement in a reducing diet is that it give a sense of satisfaction or "fulness." This is not always met merely by the use of bulk. What is called the satiety value of a diet is said to be furnished largely by foods high in fat content. The explanation given is that either alone or in combination with other foods they stimulate gastric secretion and prolong gastric digestion. The consequent slow emptying of the stomach produces the satisfactory prolonged sense of fulness.[1] Be that as it may, the fact that the banana is a "filling" food is a matter of common observation. Notwithstanding this property, however, the banana has a nearly negligible fat content. Indeed, very few foods possess a satiety value for the average person comparable to that of the banana unless they contain considerable proportions of fats with the resulting high caloric value. On the other hand, the high carbohydrate content of the banana effectively counteracts any tendency to ketosis during periods of marked caloric restriction.

The use of milk for the reducing diet seems to date from Moritz,[2] who adapted it from the regimen of Karell.[3] Used as the sole article of food, it is simple and cheap; but to many it is monotonous and flat. The use of skimmed milk in reducing diets has also been common for many years. Its caloric value is about one-half that of whole milk, while the essential nutritive constituents, with the exception of the butter fat and its vitamins, are retained.

A combination of milk and bananas is simple and palatable. The portions to be taken are readily measured; no preparation is necessary and they are universally available. Such a diet for reducing weight is very inexpensive when compared to the foods commonly used in reducing regimens, particularly the meats and salads. As a useful and practical foundation for a reducing diet, (1) the combination may be utilized for one or two meals, with moderate restriction of the third, or (2) it may be taken as the entire diet for from ten to fourteen days, then exchanged for a more varied regimen for a similar period in which the weight loss is maintained but not increased. The use of alternate periods of starvation and restricted diet was used by Folin and Denis[4] and was considered "perfectly safe, harmless and effective."

1. When used as a continuous diet, one or two large ripe bananas may be used with one glass (250 cc.) of whole milk for both breakfast and lunch. This is followed by a restricted evening meal, consisting of clear soup, a slice of lean meat (or fish or fowl), two or three portions of 5 per cent vegetables, a slice of bread and butter, and a portion of uncooked fruit. Such a diet will contain from 1,000 to 1,200 calories and may be continued for an indefinite period with satisfactory results.

2. The second method involves the use of bananas and skimmed milk alone for periods of from ten days to two weeks, then alternating with a more liberal regimen.

BANANA DIET REGIMEN WITH ALTERNATE PERIODS OF RESTRICTED AND LESS RESTRICTED DIET

Period of Strict Diet.—The strict diet consists of six large bananas and 1,000 cc. of skimmed milk, to be eaten in three or more meals, spaced according to the personal food habits of the individual. The food value of this diet is given in the accompanying table.

Only fully ripened bananas, i. e., fruit with yellow skin flecked with brown, should be used. It is easy to have such bananas available each day by purchasing in advance, when necessary, green tipped or firm yellow

1. Harrop, G. A.: Diet in Disease, Philadelphia, P. Blakiston's Son & Co., 1930, p. 120.
2. Moritz, F.: Ueber Entfettung durch reine Milchkuren, München med. Wchnschr. **55**: 1569 (July 28) 1908.
3. Karell: De le cure de lait, Arch. gén. de méd. **118**: 513 (Nov.) 1866.
4. Folin, Otto, and Denis, W.: On Starvation and Obesity, with Special Reference to Acidosis, J. Biol. Chem. **21**: 183 (May) 1915.

fruit and allowing it to ripen fully at room temperature. The skimmed milk is obtained by pouring off the top fourth of a quart bottle, which contains the cream, and using the remainder. Buttermilk made from skimmed milk may be used in place of the plain skimmed milk if desired. A salad of one fourth of a medium sized head of lettuce, or of an equal quantity of cabbage, with a small amount of mayonnaise dressing made with liquid petrolatum,[1] is a useful and valuable addition at one meal during the period of strict diet.

Food Value of Skimmed Milk and Banana Diet

	Carbohydrate	Protein	Fat	Calories
6 large bananas	132	8	1	569
1,000 cc. of skimmed milk, or four ordinary glasses	50	36	3	371
Total food value	182	44	4	940

This diet is followed for from ten days to two weeks and usually produces a weight loss of from 4 to 9 pounds (1,814 to 4,082 Gm.) in persons who are moderately active and carry on their usual living routine. Reduction of the diet to four bananas daily is well tolerated by many and the results are more striking. Weakness and severe physical discomfort, however, must be avoided. Fluids without food value, including tea or coffee, but without cream or sugar, are permitted freely. Salt is avoided to discourage retention of body fluid. An adequate fluid intake must be insisted on, preferably never less than 1.5 liters, or six large glasses daily, in addition to the milk. Such fluids without food value or salt do not increase the weight and are an important aid in guarding against constipation. On the banana diet the stools are much less bulky than on the usual mixed diet. If constipation occurs, it may be counteracted by the use of liquid petrolatum, but the use of saline purgatives is to be deprecated.

Period of Less Restricted Diet.—At the end of from ten to fourteen days on the strict diet, alterations may be made as follows:

1. Substitution of one or two eggs, boiled, steamed or poached, salted, with one-fourth square of butter for one or two bananas, as the case may be. If the first period of strict diet is too rigorous, one egg, with one-fourth square of butter, may replace one banana from the outset. This entails larger salt intake but makes the regimen better tolerated for some persons.

2. Use of from one to four average servings of green vegetables, containing 5 per cent carbohydrate or less. One square of butter melted may be poured over these vegetables at the table, but no butter or fat of any sort should be used in the cooking.

For most persons these vegetables are most satisfying in both flavor and bulk when placed in boiling water to which a pinch of salt is added. They should be removed just as soon as tender but before the fresh flavor is lost by prolonged heating.[1] The melted butter should be added at the table directly to the food portion, where it can be seen and enjoyed. Any condiments without food value, including vinegar, may be added as desired. Provided the butter is sharply restricted to the amount mentioned, the quantity of the vegetable taken may usually be unrestricted. It is advisable to use one or more helpings of these vegetables occasionally uncooked.

3. Addition of one small portion of any lean meat, fish or poultry, except pork. No thickened gravy is to be used.

No fat-containing foods, except the portions of butter expressly mentioned, and no foods containing sugar or starch in any form are to be used.

The regimen as outlined is to be followed alternately: from ten to fourteen days of the strict banana and skimmed milk diet is followed by two weeks of the less restricted diet, as just given. During the less restricted period, care is taken to avoid regaining weight, but no further loss is desirable. At the end of the less restricted period of two weeks the strict diet is again resumed for two weeks, and so on until the desired loss is made.

A small group of persons have either a distaste or an idiocyncrasy for bananas. Their use is not practicable in such cases.

The limit to which reduction may be safely undertaken is frequently placed at 1 or 2 pounds (453.6 or 907 Gm.) per week, or from 5 to 10 pounds (2,268 to 4,536 Gm.) per month.[5] Each patient, however, presents an individual problem. Rapid reduction is well tolerated by some; others must reduce more slowly. The state of well being, mental and physical, is a most important guide. Some hunger and weakness during the first three or four days of the milk and banana regimen are common and must not be regarded too seriously. Such symptoms usually disappear at the end of a week and are replaced by a feeling of well being. Certain persons complain of drowsiness early in the evening on a reducing diet; adjustment of the menu to allow a light lunch late in the evening may be helpful to such persons.

Weight loss in excess of 2 or 3 pounds (907 or 1,306 Gm.) a week, except when the diet is very markedly curtailed, represents an excessive loss of water. The patient should be warned that the larger losses of weight which may take place during the early days of dieting are due to loss of water and will not continue. Three fourths of the weight of the soft tissues is composed of water, and it is often stored temporarily in place of fat. The effect of this temporary storage must be explained to patients in order to dispel the common impression that it is possible to hold or even gain weight on greatly reduced diets. Low salt intake is useful in facilitating more rapid equilibrium. If the storage and excretion of body water is chiefly regulated by the storage and excretion of sodium, as it appears to be, a low salt intake should discourage retention of both sodium and water. Such appears to be the case on a diet of bananas and milk. The comparatively low sodium intake on this diet produces in most persons a more even loss of weight than is often found in diets with such a high carbohydrate moiety.

Although the nitrogen intake is much lower in this diet than in the diets described in current publications,[6] it is noteworthy that the nitrogen balance has been attained in six cases studied when on the strict diet at the end of one week, and of two weeks. In four it was not, but the nitrogen loss in no case exceeded 2 Gm. a day after the end of the tenth day. The weight losses in this entire group ranged between 4 and 11 pounds (1,814 and 4,990 Gm.) for the two weeks. Rubner[7]

5. Wilder, R. M.: The Management of Obesity, J. Am. Dietet. A. 6:91 (Sept.) 1930. Fishbein, Morris: Your Weight and How to Control It, New York, George H. Doran Company, 1927. Palmer, W. W.: Article on Obesity in Nelson's Loose Leaf Living Medicine 8, p. 116. Hayward, E., and Waller, D. S.: Quality Studies of Therapeutic Diets: III. The Reduction Diet, J. Am. Dietet. A. 8:256 (Sept.) 1933. Howard, C. P.: Article on Obesity in Oxford Medicine 4:195.

6. Authors listed in footnote 5. Also Evans, F. A., and Strang, J. M.: Am. J. M. Sc. 177:339 (March) 1929.

7. Rubner, M.: Arch. f. Anatomie u. Physiol., 1919, p. 135. (Physiologische Abteilung) Hindheds Untersuchungen über Eiweissminimum.

observed that uncooked fruits and vegetables can reduce the protein metabolism to low levels, almost to the wear and tear quota.

"It is a valuable piece of information to know that one may diet an obese patient on a food (milk) containing little protein and two-thirds the body's energy requirement, without danger of protein loss."[8]

SUMMARY

A diet having as its basis bananas and milk is proposed for the treatment of overweight, on the grounds of simplicity, low cost, ready availability, palatability, high satiety value, low salt content and demonstrated effectiveness in securing the desired aim.

CONVALESCENT SCARLET FEVER SERUM AND COMMERCIAL ANTITOXIN

A COMPARISON OF THEIR PROTECTIVE VALUES

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Since its introduction by Weissbecker[1] in 1897, scarlet fever convalescent serum has proved useful in the treatment of scarlet fever. The results obtained have been variable, probably because there has been much variation in the size of the doses used. Among sixteen authors[2] reporting results since 1912, the therapeutic dose varied from 10 to 240 cc. At present the trend is toward smaller doses.

Reports of protection of contacts by means of convalescent serum are meager. Degkwitz[3] treated 509 scarlet fever contacts, using 5 or 6 cc. for children up to 8 years of age and 10 cc. for those from 9 to 14 years of age. All but three escaped the disease.

Neff[4] used convalescent serum in doses of from 15 to 30 cc. for prophylaxis in twenty-five contacts, with no failures. Meader[5] of the Detroit health department reports that, of 450 contacts who were given 7.5 cc. each of pooled convalescent serum from donors who had had scarlet fever within a year or a little earlier, 2.9 per cent contracted the disease. In similar groups that did not receive convalescent serum, 12.8 per cent of the subjects came down with scarlet fever. He concludes that about 85 per cent of those passively immunized were protected against scarlet fever.

The figures cited may be misleading because no data regarding susceptibility of those receiving convalescent serum are given. Also it is not stated whether they harbored hemolytic streptococci at the time the serum was given. Since in an average group only from 40 to 50 per cent are susceptible and only a small percentage may be carriers of hemolytic streptococci, to conclude that all who did not develop scarlet fever were protected by convalescent serum is erroneous. Some in each group were undoubtedly immune before the convalescent serum was administered, and others were not infected with scarlet fever streptococci.

In their first publication on the skin test for susceptibility to scarlet fever, the Dicks[6] showed that a considerable quantity of convalescent serum was required to render Dick positive persons Dick negative. In one case it was necessary to give 10 cc. of convalescent serum on three different occasions, at intervals of three, seven and nine days, respectively, to render a person Dick negative. This quantitative element in the use of convalescent serum has been neglected. One example from our own experience is, perhaps, sufficient, although similar cases have been observed:

A woman, aged 33, a laboratory technician, was secured to work in the Cook County Contagious Hospital. Before going on duty she was given a Dick test, which was strongly positive. In order to give her some protection until such time as she could be actively immunized, she was given 7.5 cc. of pooled scarlet fever convalescent serum, the dose being used for prophylaxis at that time by the Michael Reese Hospital Serum Center. On the same day another Dick test was performed, and the following day the test was again strongly positive. Two days later she came down with a typical attack of scarlet fever. After the rash was well developed, there was blanching at the site of the convalescent serum injection.

That prophylactic doses of regular commercial antitoxin have been uniformly successful in affording complete passive immunity under similar circumstances has also been repeatedly demonstrated:

A nurse was sent to the Contagious Disease Hospital with scarlet fever, Jan. 10, 1933. Two days later her roommate, who had not been Dick tested or immunized at the Cook County Hospital, was found to have a slight sore throat, slight nausea and malaise. Her temperature was 99.2 F.; the pharynx was slightly inflamed, but there was no rash. She was isolated, nose and throat cultures were made on blood agar, and a Dick test was performed. The next day the throat culture was positive for hemolytic streptococci, and the Dick test was positive. A prophylactic dose (100,000 neutralizing units) of scarlet fever antitoxin, prepared by a state health department, was given intramuscularly, and at the same time another Dick test was made. Scarlet fever did not develop. When the patient was observed the next day, the Dick test was negative.

In an experience of eight years in controlling scarlet fever outbreaks in schools, orphanages and homes, one of us (P. S. R.) has used scarlet fever antitoxin repeatedly in this way, but only when the Dick test and throat cultures were positive and there were clinical signs, such as fever, nausea or an inflamed throat, indicating that scarlet fever was imminent. Antitoxin has always prevented the development of scarlet fever.

We felt that it would be of value to determine the titer of several lots of convalescent serum in order that a more accurate comparison with commercial antitoxin might be made. At the time that this study was undertaken, pooled human convalescent scarlet fever serum was being used freely in the Contagious Disease Hospital and was being distributed throughout Chicago by the Michael Reese Serum Center. Its average titer was not known, but it was distributed in doses of from 7.5 to 10 cc. for prophylaxis and from 20 to 60 cc. for therapy.

Through the courtesy of Dr. S. A. Levinson of the Michael Reese Serum Center, we obtained twelve different lots of pooled scarlet fever convalescent serum for study. Precisely the same method was used for titration as has been in use by one of us for several

8. Lusk, Graham: The Elements of the Science of Nutrition, ed. 4, Philadelphia, W. B. Saunders Company, 1928, pp. 364-365.

From the Wallace R. Lane Fund of the Scarlet Fever Committee and the John McCormick Institute for Infectious Diseases; and the Pediatric Department of Illinois University Medical School and Cook County Hospital Contagious Disease Hospital.

1. Weissbecker, Leopold: Ztschr. f. klin. Med. **32**: 188, 1897.
2. Thomson, David, and Thomson, Robert: The Rôle of the Streptococci in Scarlet Fever, Ann. Pickett-Thomson Research Lab. **6**: 163 (Dec.) 1930.
3. Degkwitz, R.: Causative Agent in Scarlet Fever, München. med. Wchnschr. **69**: 955 (June 30) 1922.
4. Neff, F. C.: Scarlet Fever Immunization, Arch. Pediat. **39**: 250 (April) 1922.
5. Meader, P. M.: Scarlet Fever Prophylaxis, J. A. M. A. **94**: 622 (March 1) 1930.
6. Dick, G. F., and Dick, Gladys H.: A Skin Test for Susceptibility to Scarlet Fever, J. A. M. A. **82**: 265 (Jan. 26) 1924.

years in testing commercial antitoxins for the Scarlet Fever Committee.[7]

Dilutions were made as follows:

1. A toxin control prepared by adding 5 cc. of physiologic solution of sodium chloride to 5 cc. of a solution of toxin ten times as strong as standard skin test solution; so that 0.1 cc. (the amount injected) contained five skin doses.

2. A toxin-antitoxin mixture. Five cubic centimeters of the toxin dilution containing ten times the standard skin test strength was added to 5 cc. of a known dilution of the convalescent serum to be tested. The preliminary dilution of serum was usually 1:5. One-tenth cubic centimeter of the mixture contained five skin test doses of toxin and an unknown amount of antitoxin. In a mixture thus prepared, if the serum was found to have neutralized the toxin, a titer of at least 500 neutralizing units per cubic centimeter was assumed. (Each 0.1 cc. of the mixture injected contained five skin test doses and 0.01 cc. of serum. Thus 1 cc. of serum contained 100 × 5 neutralizing units.)

3. A serum control. Five cubic centimeters of the serum dilution was added to 5 cc. of physiologic solution of sodium chloride.

7. Dick, G. F., and Dick, Gladys H.: Therapeutic Results with Concentrated Scarlet Fever Antitoxin: Preparation, Standardization and Dosage of the Antitoxin, J. A. M. A. 84:803 (March 14) 1925.

After the discovery, by preliminary Dick tests, of a number of Dick positive individuals, all three dilutions were injected into the skin in amounts of 0.1 cc. each after one and a half to two hours' incubation of the mixtures at 37 C. The tests were observed and recorded in millimeters, with some indication of the degree of pinkness and swelling, at twenty-four and forty-eight hours.

A typical titration record follows. If the toxin was neutralized for forty-eight hours in at least four of six satisfactory tests, the serum was considered acceptable in the dilution used. No persons whose toxin controls did not average 20 mm. or over in both diameters were considered suitable subjects for the tests. If a positive reaction was obtained with the serum control, the test was, of course, disregarded.

TABLE 1.—*Results of Titration of Convalescent Serums S-46 and S-47* *

Test Subject		Toxin Control (5 Cc. Diluted Toxin Containing 100 Skin Test Doses per Cc. Plus 5 Cc. Physiologic Solution of Sodium Chloride)	Toxin-Antitoxin Mixture (5 Cc. Diluted Toxin Containing 100 Skin Test Doses per Cc. Plus 5 Cc. Convalescent Serum S-46 Diluted 1-10)	Toxin-Antitoxin Mixture (5 Cc. Diluted Toxin Containing 100 Skin Test Doses per Cc. Plus 5 Cc. Convalescent Serum S-47 Diluted 1-10)	Serum Control S-46 (5 Cc. Convalescent Serum S-46 Diluted 1-10 Plus 5 Cc. Physiologic Solution of Sodium Chloride)	Serum Control S-47 (5 Cc. Convalescent Serum S-47 Diluted 1-10 Plus 5 Cc. Physiologic Solution of Sodium Chloride)
1	24 hours	25 by 18 mm. moderate red	0	0	0	0
	48 hours	22 by 20 mm. faint	0	0	0	0
2	24 hours	28 by 22 mm. moderate red	0	0	0	0
	48 hours	28 by 22 mm. faint	0	0	0	0
3	24 hours	23 by 18 mm. moderate red	0	0	0	0
	48 hours	20 by 15 mm. faint	0	0	0	0
4	24 hours	25 by 20 mm. moderate red	5 by 6 mm. moderate red	0	0	0
	48 hours	22 by 18 mm. very faint	14 by 16 mm. moderate red	16 by 15 mm. moderate red	0	0
5	24 hours	22 by 18 mm. faint	0	0	0	0
	48 hours	0	0	0	0	0
6	24 hours	25 by 21 mm. moderate red	16 by 14 mm. moderate red	14 by 14 mm. moderate red	9 by 10 mm. moderate red	0
	48 hours	0	20 by 16 mm. moderate red	18 by 15 mm. moderate red	0	0

* Convalescent serums 46 and 47 held the scarlet fever toxin forty-eight hours when used in a dilution of 1 to 10 in four of six satisfactory test subjects. Thus the serums contain 1,000 neutralizing units per cubic centimeter.

TABLE 2.—*Results of Titration of Twelve Lots of Pooled Convalescent Serum and Three Lots of Normal Adult Serum* *

Less Than 250 Neutralizing Units per Cc.	250 Neutralizing Units per Cc.	500 Neutralizing Units per Cc.	1,000 Neutralizing Units per Cc.
S-23	S-26	S-29	S-32
S-37	S-39	S-36	S-46
N-AI	N-11	S-38	S-47
	N-12	S-41	
		S-43	

* S, convalescent serum; N, normal adult serum. The average titer for twelve convalescent serums was 500 neutralizing units per cubic centimeter. The pooled normal adult serums averaged less than 250 neutralizing units per cubic centimeter. All commercial scarlet fever antitoxin is required by the United States Public Health Service to contain 15,000 neutralizing units per cubic centimeter before it can be marketed, a potency thirty times the potency of average convalescent serum and more than sixty times that of the normal adult serums tested.

Table 2 gives the results of twelve convalescent and three normal pooled adult serums tested. The average titer for the convalescent serum was about 500 neutralizing units per cubic centimeter, and, for the normal adult serum, less than 250 neutralizing units per cubic centimeter. All commercial scarlet fever antitoxins are tested in exactly the manner outlined here by one of us (P. S. R.) before they are distributed. No commercial antitoxin is allowed on the market unless it contains 15,000 or more neutralizing units per cubic centimeter. Thus, to introduce the accepted prophylactic dose of scarlet fever antitoxin (100,000 neutralizing units), one would have to give 200 cc. of convalescent serum, or 7 cc. of the weakest commercial antitoxin.

To obtain further evidence, Dick positive persons were given convalescent scarlet fever serum and Dick tests were performed the same day and subsequent days to observe at what speed passive immunization was accomplished. Another group was given commercial antitoxin in prophylactic doses and tested in the same way.

Table 3 shows that convalescent serum had no uniform effect on Dick tests performed the same day and subsequent days. In the majority of cases the Dick test was still positive the next day and for several days

thereafter. In some cases, no effect whatever was noted.

On the other hand, the Dick test was always completely negative the day after the injection of a prophylactic dose of antitoxin (table 4).

In our experience, the ordinary commercial preparation of scarlet fever antitoxin (100,000 neutralizing units for prophylaxis) has always afforded complete passive protection against scarlet fever in susceptible persons, if given before the onset of the disease.

TABLE 3.—*Results of Dick Tests Before and After the Administration of Convalescent Scarlet Fever Serum**

Age, Years	Date of First Dick Test	Reading of First Dick Test	Date of Serum Administration	Amount of Serum Given Lot	Amount of Serum Given Cc.	No. of Neutralizing Units	Date of Dick Test	Reading Next Day	Date of Dick Test	Reading Next Day	Date of Dick Test	Reading Next Day
8	Dec. 10	28 by 20 mm. moderate red	Dec. 12	..	20	.....	Dec. 18	24 by 22 mm. moderate red				
10	April 22	10 by 12 mm. faint pink	April 25	36	10	5,000	April 23	Negative				
6	April 22	10 by 10 mm. faint pink	April 23	36	10	5,000	April 23	Negative				
10	April 22	25 by 15 mm. moderate red	April 23	36	10	5,000	April 23	35 by 23 mm. bright red	May 11	35 by 20 mm. bright red		
11	April 24	32 by 14 mm. moderate red	April 25	37	10	2,500	April 25	18 by 16 mm. moderate red	April 26	18 by 16 mm. moderate red	April 27	6 by 6 mm. moderate red
3	April 24	14 by 14 mm. moderate red	April 25	37	10	2,500	April 25	14 by 14 mm. moderate red	April 27	10 by 10 mm. moderate red	April 28	Negative
9	April 24	25 by 15 mm. moderate red	April 25	39	20	5,000	April 25	17 by 16 mm. moderate red	April 26	Negative		
7	April 24	28 by 15 mm. moderate red	April 25	36	10	5,000	April 25	30 by 15 mm. moderate red	April 26	Negative		
3	April 24	16 by 14 mm. moderate red	April 25	37	10	2,500	April 25	18 by 15 mm. moderate red	April 26	Negative		
14	April 24	18 by 16 mm. moderate red	April 25	39	20	5,000	April 25	24 by 26 mm. moderate red	April 27	14 by 10 mm. moderate red		
9	April 24	30 by 16 mm. moderate red	April 25	39	20	5,000	April 25	16 by 15 mm. moderate red	April 26	15 by 12 mm. moderate red	April 27	Negative
5	April 24	26 by 15 mm. moderate red	April 25	37	10	2,500	April 25	Negative				
5	April 24	25 by 15 mm. moderate red	April 25	37	10	2,500	April 25	26 by 15 mm. moderate red	April 26	Negative		
6	April 24	30 by 18 mm. moderate red	April 25	37	10	2,500	April 25	24 by 16 mm. moderate red	April 26	16 by 16 mm. moderate red		
10	May 5	40 by 30 mm. bright red, swollen	May 6	40	20	.....	May 6	40 by 30 mm. bright red, swollen	May 7	40 by 30 mm. bright red, swollen	May 8	40 by 30 mm.† bright red, swollen
Adult	May 17	20 by 20 mm. moderate red	May 18	38	10	5,000	May 19	20 by 20 mm. moderate red	May 20	20 by 15 mm. moderate red		
Adult	May 17	20 by 15 mm. moderate red	May 18	38	10	5,000	May 19	20 by 15 mm. moderate red	May 20	20 by 15 mm. moderate red	May 21	20 by 12 mm. moderate red
Adult	May 17	25 by 15 mm. moderate red	May 18	38	10	5,000	May 19	25 by 15 mm. moderate red	May 20	10 by 10 mm. moderate red	May 21	5 by 5 mm. moderate red
Adult	May 17	20 by 10 mm. moderate red	May 18	38	10	5,000	May 19	20 by 10 mm. moderate red	May 20	20 by 10 mm. moderate red	May 21	20 by 10 mm. moderate red
Adult	May 17	15 by 10 mm. moderate red	May 18	38	10	5,000	May 19	15 by 10 mm. moderate red	May 20	10 by 5 mm.	May 21	8 by 5 mm. moderate red

* The results shown in this table indicate that a 10 cc. dose of convalescent serum administered prophylactically which does not usually contain more than 5,000 neutralizing units of antitoxin is not sufficient to render a positive Dick test negative in the majority of cases.
† May 11, prophylactic scarlet fever antitoxin and Dick test given; May 12, Dick test negative.

TABLE 4.—*Results of Dick Tests Before and After Administration of Commercial Scarlet Fever Antitoxin (Prophylactic Dose, 100,000 Neutralizing Units)**

Age, Years	Date of First Dick Test	Reading of First Dick Test	Date of Antitoxin Administration	Date of Dick Test	Reading Next Day
10	Jan. 13	17 by 15 mm. moderate red	Jan. 14, E. R. Squibb & Sons	Jan. 14	Negative
8	Jan. 7	24 by 22 mm. moderate red	Jan. 13, E. R. Squibb & Sons	Jan. 14	Negative
Adult	May 16	15 by 10 mm. moderate red	May 17, Parke, Davis & Co.	May 17	Negative
Adult	May 16	10 by 10 mm. moderate red	May 17, Parke, Davis & Co.	May 17	Negative
Adult	May 16	25 by 20 mm. moderate red	May 17, Parke, Davis & Co.	May 17	Negative
Adult	May 16	15 by 10 mm. moderate red	May 17, Parke, Davis & Co.	May 17	Negative
Adult	May 16	25 by 25 mm. moderate red	May 17, Parke, Davis & Co.	May 17	Negative
Adult	May 16	15 by 15 mm. moderate red	May 17, Parke, Davis & Co.	May 17	Negative
5	May 26	30 by 20 mm. bright red	May 27, Mich. Health Dept.	May 27	Negative
1	May 26	20 by 20 mm. moderate red	May 27, Mich. Health Dept.	May 27	Negative
10	May 11	60 by 30 mm. bright red, swollen	May 12, Mich. Health Dept.	May 12	Negative

* The results shown in this table demonstrate that 100,000 neutralizing units of antitoxin, which is the required prophylactic dose for commercial products in the United States, rendered the susceptible individuals immune within twenty-four hours.

SUMMARY

1. Cases have been observed in which the usual dose of scarlet fever convalescent serum administered to susceptible individuals failed to afford passive protection against scarlet fever.

2. Using the same method as is used in titrating commercial antitoxins, we found that twelve lots of pooled convalescent serum had a potency of from less than 250 neutralizing units (a unit is the amount of serum required to neutralize one skin test dose of toxin) to 1,000 neutralizing units per cubic centimeter. The average potency was 500 neutralizing units per cubic centimeter.

Commercial antitoxins are required to have a potency of not less than 15,000 neutralizing units per cubic centimeter. Thus, to obtain as many neutralizing units as are present in commercial antitoxins, at least thirty times as much convalescent serum is required.

3. Twenty persons known to be susceptible to scarlet fever were given 10 or 20 cc. of pooled scarlet fever convalescent serum and Dick tested, usually the same day and for a few days thereafter. Only three became immediately Dick negative. Two of these had very faint original tests. A large proportion had not become Dick negative several days later. One whose test remained unchanged three days after administration of convalescent serum at once became immune after a prophylactic dose of commercial scarlet fever antitoxin.

COMMENT

At a time when convalescent scarlet fever serum is being so widely used, it is pertinent again to call attention to the fact that there is a quantitative element in scarlet fever therapy that should not be neglected.

Scarlet fever antitoxin has proved to be distinctly useful in preventing complications, in shortening the

febrile period, and in reducing the mortality rate; also in passively protecting scarlet fever contacts.

Convalescent scarlet fever serum is useful if given in adequate amount and, in addition, has the advantage of not containing horse serum. That convalescent serum is very rarely given in adequate dosage is apparent from this study.

Unless an unusually potent convalescent serum is available, patients will receive more immune bodies from the therapeutic dose of scarlet fever antitoxin (300,000 neutralizing units) than from convalescent scarlet fever serum given in the dosage at present usually used. The benefit obtained varies directly with the speed with which the antitoxin is given.

While this communication does not concern itself with relative costs, it is worth mention that if convalescent serum is distributed through a serum center which must maintain personnel and equipment it inevitably costs much more per antitoxic unit than commercial antitoxin.

Gordon[8] has advocated immunotransfusion for severe septic scarlet fever, claiming for it a distinct superiority to scarlet fever antitoxin. He says: "With immunotransfusion . . . the amount of protective substance is from five to ten times greater than is ordinarily accomplished by the injection of serum and, furthermore, is introduced into the blood stream directly rather than indirectly, as by the intramuscular route." Immunotransfusion is undoubtedly a useful procedure. However, in the light of the data given here, Gordon's statement seems open to question.

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THE CONGENITALLY SHORT ESOPHAGUS

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Atresia of the esophagus with an esophagotracheal fistula has long been considered the most common congenital anomaly of this structure. The fatal termination of all these cases and the opportunities afforded for the study of the malformations at autopsy has resulted in a more general knowledge and comprehensive literature of atresia than is available on congenital stenosis. Being compatible with life, congenital stenosis may not produce symptoms until solid food is eaten; in some cases, symptoms of obstruction may not occur until adult life has been reached. Esophagoscopists are generally agreed that congenital stenosis is more common than their personal records or the reports in the literature would indicate. It is probable that a number of these are not differentiated from acquired stenosis, that others are treated by bouginage without a preliminary diagnostic esophagoscopy, and that an equally large number go through life with the knowledge that they cannot swallow normally but get on satisfactorily with careful selection and proper mastication of foods. A careful study of these groups would undoubtedly reveal many cases of congenital deformity. This was confirmed in certain of our cases.

In 1931, Findlay and Kelly[1] described an anomaly that was characterized by congenital shortening of the esophagus and by the presence of a portion of stomach in the thoracic cavity with stenosis at the junction of the esophagus and thoracic stomach. A detailed report of nine cases was presented. Similar cases had been previously recognized but these were confused with an associated diaphragmatic hernia of the stomach.[2] By esophagoscopy it was found that the dilated food passageway between the point of stenosis and the diaphragm was lined by gastric mucosa. This was corroborated by histologic examination of tissue removed at esophagoscopy.

Coincident with the receipt of Findlay and Kelly's[1] report we observed identical changes in a patient admitted for removal of a bolus of meat from the esophagus. Similar studies carried out in several cases of esophageal ulceration with stenosis, previously diagnosed as peptic ulcer of the esophagus, indicated that these, too, presented a congenitally short esophagus and a thoracic stomach. Continued interest in this anomaly has led to the discovery of fourteen cases since 1931.

The scarcity of reports of these cases in the literature should not indicate that the condition is rare. With the exception of a report by us,[3] all data pertaining to this anomaly have appeared in British medical literature. On the basis of our discovery of fourteen cases within four years, this condition would appear to be relatively common. Cases are probably overlooked because of the lack of a proper technic in the roentgen study and failure, on the part of the esophagoscopist, to investigate carefully the food passageways distal to the stenosis or to note the distance between the upper teeth and the point of transition of esophageal into stomach mucosa. Two of our cases had previously been diagnosed as acquired stricture; four were considered peptic ulcer of the esophagus. Ulceration was present, and, occurring at a point proximal to the level of the diaphragm, it was assumed to originate in the esophagus. The stenosis, considered as cicatricial in origin, was explained as resulting from the healing ulcer. The food passageway distal to the ulceration was not examined esophagoscopically. Consequently no opinion regarding its character was expressed.

AGE AND SEX

The series of cases reported by Findlay and Kelly[1] consisted of nine children: seven boys and two girls. Their ages varied from 4 weeks to 9 years and 10 months. Monkhouse and Montgomery[4] reported a group of seven cases. All these were adults. Our group, consisting of nine females and five males, included one girl and three boys varying from 6½ to 9½ years, eight women from 28 to 64 years of age, and two men, aged 21 and 32 respectively. Two children were brother and sister.

SYMPTOMS

No classic symptom group has been suggested. One can divide the cases into two groups. In one, the out-

8. Gordon, J. E.: Immunotransfusion in Scarlet Fever, J. A. M. A. **100**: 102 (Jan. 14) 1933.

From the Bronchoscopic Clinic and the Department of Roentgenology, Jefferson Medical College Hospital.

1. Findlay, Leonard and Kelly, A. B.: Congenital Shortening of the Oesophagus and the Thoracic Stomach Resulting Therefrom, J. Laryng. & Otol. **46**: 797 (Dec.) 1931.
2. Kelly, A. B.: Congenital Stenosis of the Oesophagus in Children Associated with Diaphragmatic Hernia of the Stomach, J. Laryng. & Otol. **45**: 679 (Oct.) 1930.
3. Clerf, L. H., and Manges, W. F.: Congenital Anomalies of the Esophagus, with Special Reference to the Congenitally Short Esophagus with a Portion of Stomach above the Diaphragm, Ann. Otol., Rhin. & Laryng. **42**: 1058 (Dec.) 1933.
4. Monkhouse, F. P., and Montgomery, S. K.: A Report of Seven Cases of Partial Thoracic Stomach with Short Oesophagus, J. Laryng. & Otol. **48**: 743 (Nov.) 1933.

standing symptoms are dysphagia and regurgitation with disturbances in nutrition and growth. These were present in three children and two adults. In seven of Findlay and Kelly's [1] cases, regurgitation was present from birth; disturbances in nutrition and growth were observed in all. In the other group, distress, particularly after eating, was noted in addition to dysphagia with lodgment of food and regurgitation. These were

Fig. 1.—Short esophagus in a woman who, while eating meat twenty-four hours previously to examination, had a portion lodge in the esophagus. In *A* the arrows point to a small quantity of barium that was retained in the esophagus proximal to the bolus of food. Examination was difficult because of constant retching and inability to retain the barium mixture in the esophagus. The obstruction caused by the food was practically complete. In *B*, after the bolus of food was removed esophagoscopically, roentgen examination showed a portion of stomach in the thoracic cavity with an esophagus too short to reach to the level of the diaphragm. Note the width of the opening through the diaphragm.

observed in one child and six women. Certain cases are symptom free until dietetic indiscretions result in the lodgment of food or the development of pathologic lesions direct attention to the esophagus. This was observed in the case of a man whose first symptom referable to the esophagus consisted of temporary lodgment of a portion of apple in the lower part of the esophagus six months before coming under our observation. No further disturbances were noted until three months later, when dysphagia for solid foods developed. The roentgenograms indicated that there was present an organic stenosis. At esophagoscopy there was found a congenitally short esophagus with a thoracic stomach, and an indurated area with ulceration. Tissue removed was reported by Dr. B. L. Crawford as adenocarcinoma. This was subsequently corroborated.

Dysphagia.—Careful investigation will often reveal that dysphagia was present since birth or, more commonly, since solid food was added to the dietary. This was observed in eight cases. In five, difficulty in swallowing was present for "many years" to twenty years. Several found it necessary to take large quantities of fluid when eating to aid in swallowing. Regurgitation was commonly observed and usually occurred during mealtime. Lodgment of food was of frequent occurrence; seven of the patients were referred to the Jefferson Hospital Bronchoscopic Clinic because of aphagia resulting from lodgment of food (fig. 1).

Weight Loss.—This was particularly noticeable in the children, all of whom were underweight and poorly developed. In the case of a child, aged 8 years, gastrostomy was performed because of extreme emaciation and marked dysphagia. A diagnosis of cicatricial stenosis was made and the true nature of the condition was not discovered until esophagoscopy was done. The adults were generally well nourished, one weighing 250 pounds (113.4 Kg.).

Distress.—Symptoms varying from "indigestion" and flatulence to severe epigastric pain were present in seven adults and one child. These occurred very shortly after taking food. Severe pain was a prominent symptom in four. It was commonly referred to the epigastrium and behind the lower half of the sternum; in two it was also referred to the back. In three cases acid foods produced severe distress. Alkalis, notably sodium bicarbonate, gave prompt relief and were frequently employed by seven of the patients.

It was interesting to note that two patients experienced severe pain on assuming a dorsally recumbent posture; in fact, they slept only in a semi-sitting position. On further questioning it was found that relief was also secured by lying on the right side. Esophagoscopy in these cases revealed a large area of superficial ulceration at the gastro-esophageal junction. The pain was unquestionably due to contact of gastric juice with the area of ulceration. In the absence of a normal hiatus the gastric contents would gravitate upward to the ulcerated area when the patient assumed a recumbent posture. Alkalis gave immediate relief, but this was usually brief. The characteristic pain could be induced by touching the ulceration with a swab of silver nitrate solution, a topical application used in the esophagoscopic treatment. Preliminary cocainization of the ulcerated area gave complete relief.

ROENTGEN EXAMINATION

The essential points in the roentgen diagnosis of congenital shortening of the esophagus are: First, a portion of the cardiac end of the stomach must be

Fig. 2.—This shows the rugae of the stomach at the level of the wide diaphragmatic opening; also where the esophagus joins the stomach. There is marked dilatation of the esophagus above the esophagogastric junction. There was remarkably little esophagoscopic evidence of narrowing at the junction of esophagus and stomach.

shown to stay above the level of the diaphragm. Second, the esophagus must be shown to be too short to reach as low as the level of the diaphragm.

As to the first point, the only characteristic sign is the presence of multiple longitudinal rugae markings in that portion of the tube through and just above the diaphragm (fig. 2). When this point is established,

the change of posture will not cause that portion of the stomach above the diaphragm to go either lower or higher, and there will be no variation in relations on repeated studies.

As to the second point, when it is seen that a portion of the stomach is above the diaphragm it is necessary to visualize the entire length of the esophagus above the narrowing at the junction of the esophagus and stomach and show by views at different angles and positions that the esophagus is not tortuous or angulated but that it is a nearly straight tube and that the narrowed portion could not possibly reach the diaphragm (fig. 1*B*).

Fig. 3.—A woman, aged 53, had dysphagia for twenty years. Food frequently lodged in the esophagus for brief periods. There was no history of swallowing a caustic or other injury. This case was, however, considered one of cicatricial stenosis until the substenotic food passageway was explored. The rugae of the stomach through a large opening in the diaphragm and the expanded portion of the stomach above the diaphragm shadow are clearly demonstrated. The upper esophagus is greatly dilated. The constricted portion is 7 cm. in length.

If it is to be viewed at all in the light of a diaphragmatic hernia or hernia of the stomach through the diaphragm, the term "congenital fixed" or "congenital irreducible" should qualify the term "hernia."

There are other contributory signs, the most important of which is that the portion of the stomach above the diaphragm is larger than the esophagus and will show its true diameter or capacity only when that portion below the diaphragm is well filled (fig. 2). This can be best accomplished when the patient is in the right oblique prone posture,[5] previously described, in which position the hiatus is on a higher level than the upper end of the esophagus, and gravity tends to keep the barium mixture in the cardiac end of the stomach. In one of the cases we did not succeed in getting diagnostic evidence until the patient was placed in this posture. The right oblique prone posture is not practical for children too young or too uncooperative to carry out the act of drinking through a tube. In such cases the recumbent posture is essential and at times there is some advantage in tilting the table so that the upper end of the esophagus is at a lower level than the lower end. The only objection to this posture in adults is that the roentgenoscopic view and the roentgenograms are less clear because of the total thickness and density of the median line structures, particularly the thoracic vertebrae and the heart. When a lumen wider than the normal esophagus above the level of the hiatus has been demonstrated and there is no evidence of obstruction, either organic or spasmodic, at the diaphragm, the evidence is strongly contributory.

5. Manges, W. F.: Right-Oblique-Prone Posture for Study of Esophagus, Am. J. Roentgenol. 15:374 (Oct.) 1926.

Roentgenographically, all our cases have shown some degree of narrowing where the esophagus joins the stomach. This appearance of narrowing does not differ greatly from that seen in strictures following injury, except that in the vast majority of instances the narrowing due to cicatricial tissue formation following injury is much more marked when it is first seen, the portion of the esophagus below the stricture is not dilated, the history is that the difficulty in swallowing has been progressive following an accident, and there is apt to be more or less emaciation (fig. 3), while in the congenitally short cases the difficulty in swallowing a large bolus of solid food has always been present. The narrowing at times causes so little inconvenience that the diagnosis is overlooked entirely or is only by chance brought to light in adult life. On the other hand, the lumen has been rather small in a few cases. In two, the condition was brought to light only after complete obstruction by a bolus of food. The narrowing has been rather uniform as to location, at about the level of the seventh to the ninth dorsal vertebra.

As reported by Findlay and Kelly,[1] we found no collection of air or gas in the stomach either above or below the diaphragm. In none did we find any appreciable evidence of delay of the barium mixture at the diaphragm level, and in all of them the opening in the diaphragm was appreciably larger than normal.

As mentioned previously, two of our group were of one family, brother and sister, but two other sisters and three brothers showed no abnormality.

In all our cases it was evident that the esophagus proximal to its junction with the thoracic portion of stomach was not long enough to reach the diaphragm in any posture or any state of filling with any consistency of barium mixture. A few of them showed evidence of dilatation proximal to the narrowing. Roentgenoscopic views in anteroposterior and lateral projections with the patient both standing and lying down have shown an entire absence of tortuosity of the esophagus.

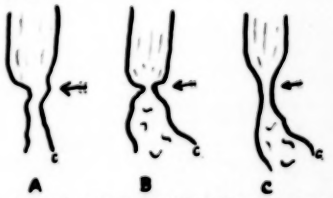

Fig. 4—A schematic illustration indicating the impressions gained from esophagoscopic exploration in cicatricial stenosis and in two of the more common forms of narrowing observed in the congenitally short esophagus. In cicatricial stricture (*A*) the lumen is commonly eccentric with some distortion. In the congenital form of stenosis the lumen is concentrically placed and may consist of a weblike narrowing (*B*) or it may present a funnel-like appearance of variable length (*C*).

CHANGES SEEN AT ESOPHAGOSCOPY

There were commonly found moderate evidences of chronic esophagitis and some dilatation of the thoracic esophagus. In three cases the suprastenotic dilatation was marked. In all the cases but one there was found a maximum point of narrowing of the esophageal lumen, which was approximately opposite the fourth rib or fourth interspace along the left border of the sternum. The stenotic lumen varied in size from one admitting a 9 mm. standard esophagoscope to one that was not more than 4 mm. in diameter. Resistance offered to the tip of the esophagoscope suggested an

acquired stricture. The lumen was practically always concentrically placed and lacked the distorted appearances commonly noted in cicatricial stenosis (fig. 4*A*). The general appearances, however, were not unlike those noted in acquired strictures, although there was lacking the customary evidence of scarring of the esophageal wall. The absence of visible scarring could be readily explained by the masking effects of chronic inflammatory changes.

Fig. 5.—Glandular mucosa, gastric type, that was removed from the food passageway above the level of the diaphragm as shown in figure 6. The surface of the tissue is covered by columnar epithelial cells which are continuous with the underlying gland structure. (Histologic study by Dr. B. L. Crawford; slightly reduced from a photomicrograph with a magnification of 100 diameters.)

In two cases the stenosis was weblike; in a third, the narrowing was abrupt, the lumen being about 4 mm. in diameter (fig. 4*B*). In nine cases the narrowing was funnel-like in appearance, varying from 2 to 7 cm. in length (fig. 4*C*). In one there appeared several points of narrowing within several centimeters, suggesting multiple strictures. In the remaining case there was no demonstrable point of narrowing at the esophagogastric junction.

The appearances of the stenosed lumen, which do not resemble the normal hiatus esophageus, and the resistance offered to the tip of the esophagoscope should clearly indicate that the narrowing is not of sphincteric or of pinchcock origin. No opinion can be given concerning the histologic components. The resistance to dilation should indicate that it contains considerable connective tissue elements. The only available data on the histologic study of a congenitally short esophagus is reported by Jacob, Tweedie and Negus,[6] who recorded the changes observed in the case of a child, aged 1 year and 7 months, which came to autopsy. They found the narrowing of the esophagus beginning a short distance below the bifurcation of the trachea. It extended for a distance of 2 cm. Below this the food passage opened again and presented appearances of stomach mucosa. The lumen of the narrowed portion showed a superficially ulcerated surface. Histologic examination of the esophagus above the stenosis exhibited a fairly normal esophageal wall with thickening of the epithelial layer and muscularis mucosae. A study of the walls below the stenosis exhibited stomach mucosa. It was difficult to identify the wall of the stricture, as the epithelium was ulcerated and no surviving fragments could be found for identification. Marked inflammatory changes were present in the submucosa and muscularis coat.

Ulceration varying from a small area at the point of stenosis to extensive changes involving the funnel-like narrowing and entire zone of stenosis was observed in eight cases. The ulceration appeared superficial; the areas were covered by a thin grayish exudate and sharply demarcated by a narrow inflammatory zone. Granulations, when present, were commonly flat. In the four cases in which severe epigastric pain associated with taking of food was complained of, the ulceration was extensive.

Immediately on traversing the stenosis, the esophagoscope entered into what appeared to be stomach, although anatomically the tip of the tube remained proximal to the level of the diaphragm. This fact might be readily overlooked unless accurate routine comparative measurements were made. Failure to traverse the normal hiatus before the stomach is entered should be suggestive of a congenital anomaly unless the stenosis involves the hiatal level of the esophagus. In no case was it possible esophagoscopically to observe a narrowing in the stomach which would correspond to the level of the diaphragm, normally the hiatal level. From an esophagoscopic standpoint one gained the impression that as soon as the stenosis was passed one entered the stomach. The patient with a gastrostomy fistula was examined by retrograde gastroscopy several times to determine this point. Through the retrograde gastroscope one could not differentiate between the appearance in this case and that in the normal except that the esophagogastric junction offered resistance to the gastroscope and could not be traversed; in addition, this point was found at a higher level than is normal.

Fig. 6.—Roentgenogram made in the lateral plane with the esophagoscope in situ. The tip of the tube is below the esophagogastric junction and is in contact with the stomach wall. Tissue removed from this level proved to be normal gastric mucosa. Note that the tip of the esophagoscope and the point of tissue removal are well above the level of the diaphragm, the dome of which is barely visible. The case examined in this study is shown in figure 3.

In nine of the cases, tests were made with litmus paper after the stenosis was passed, to ascertain the reaction of the fluids. It was invariably acid. This in itself is of little importance, for it is a known fact that regurgitation of gastric content is not uncommon when an esophagos-

6. Jacob, F. H.; Tweedie, A., and Negus, V. E.: Congenital Shortening of the Oesophagus, J. Laryngol. & Otol. 48:1-486 (July) 1933.

copy is performed on a conscious patient. To corroborate the esophagoscopic opinion that gastric mucosa was observed at a point above the level of the diaphragm, specimens of tissue were removed in eight cases. In all these histologic examination indicated the presence of normal or ulcerated gastric mucosa (fig. 5). For accurate localization of the anatomic site from which mucosa was removed for biopsy, esophagoscopy was performed on a double plane roentgenoscopic table. The position of the tip of the esophagoscope at the point where the tissue was removed was recorded roentgenographically in the lateral view (fig. 6).

The esophagoscopist, unaided by an accurate report from the roentgenologist regarding the condition of the food passage immediately beyond the stenosis, is often confronted with the question whether these are cases of acquired stenosis. If the point of stenosis cannot be traversed esophagoscopically, no opinion can be given regarding the presence or absence of a congenital anomaly. A negative history of injury to the esophagus cannot be accepted as conclusive evidence that a stenotic lesion is congenital, since caustics may be swallowed during the first few years of life and the accident not remembered. If the stenosis can be passed esophagoscopically, inspection of the substenotic food passageway, anatomic localization of the level of the stenosis and the presence or absence of the normal hiatal pinchcock will afford adequate evidence. The roentgenographic evidences and the esophagoscopic observations should be conclusive.

TREATMENT

The chief problems to be considered are those of providing an adequate food supply and the relief of pain. Practically all the adults observed were well nourished. Dietetic indiscretions and hasty eating were usually responsible for disturbances in swallowing. The children, however, were undernourished and poorly developed.

In the cases of web stenosis, prompt improvement in swallowing was observed following esophagoscopic dilation, since the web offered little resistance to the bougie and the tip of the esophagoscope. Satisfactory results were secured in the nonulcerated cases by proper selection of food, thorough mastication and occasional esophagoscopic dilation.

Patients with ulceration at the junction of the esophagus and thoracic stomach presented a difficult problem in treatment. Pain was the outstanding symptom. Various combinations of alkalis and bismuth subnitrate afforded temporary relief. Topical applications of silver nitrate, 10 per cent, to the ulcer seemed to be helpful. Dietetic treatment along the lines indicated in gastric ulcer is recommended. In certain of these, esophagoscopic dilation afforded relief. In one case dilation of the stenosis was followed by complete relief of pain, although ulceration persisted.

SUMMARY

Among fourteen cases of congenital shortening of the esophagus with stenosis and the presence of a portion of stomach in the thoracic cavity there were four children and ten adults. Two children, brother and sister, are of one family. Two groups of symptoms were noted, one consisting of those resulting from esophageal obstruction and malnutrition; in the other, symptoms due to ulceration were prominent, although there was some mechanical obstruction. The roentgenographic and esophagoscopic changes were those of narrowing of the lumen at the esophagogastric junction, a point above the normal hiatal level with a portion of stomach above the diaphragm. In several, superficial ulceration of the mucosa was observed at the level of the stenosis. In eight cases mucosa was removed from the food passage above the diaphragm level for histologic examination. This proved to be gastric mucosa.

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MENINGOCOCCEMIA

REPORT OF TWO CASES WITH RECOVERY

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Meningococcemia, unaccompanied by meningitis or with meningitis occurring as a late complication, has been reported infrequently in the American literature. Cases reported in the foreign journals outnumber those in America in the proportion of six to one. Four cases have been diagnosed at the Peter Bent Brigham Hospital. The first one was reported in 1924 by Dock,[1] and the second by Marlow[2] in 1929. My purpose in this paper is to report two additional cases. A repetition of the description of the disease, which has been so comprehensively presented in numerous papers, especially those of Chalier, Giraud and Morel,[3] Bloedorn,[4] Dock,[1] Jacono,[5] and Binns and Fothergill,[6] seems no longer desirable in a communication of this kind.

REPORT OF CASES

Case 1.[7]—E. H., a white woman, aged 31, single, referred to the hospital, March 9, 1930, complained of intermittent chills, fever and skin eruptions of nine weeks' duration. A diagnosis of meningococcic septicemia had been made during the fifth week, but the administration of polyvalent antimeningococcus serum over a period of four weeks had been without beneficial effects.

The family and past histories were irrelevant. While at work and in apparently good health, the patient had had a shaking chill followed by a profuse sweat. For the following ten days she complained of weakness and migratory joint pains but continued at work. From the eleventh day until admission there was a daily rise in temperature to 104 or 105 F., usually following a chill. The rise in temperature was never sustained more than eight hours. Between the bouts of fever the patient felt fairly well. There were no abnormal physical manifestations until the intermittent appearance of a rash, first observed during the sixth week and occurring thereafter during the febrile periods. The eruption consisted of crops of deep red maculopapules and purpuric spots varying from 2 mm. to 1 cm. in diameter. These lesions appeared in greatest numbers on the lower extremities, but occasionally on the arms, trunk and face. The white blood cells averaged 14,000 per cubic millimeter during the afebrile periods. Three blood cultures taken during the fourth week were positive and produced a gram-negative diplococcus with the cultural characteristics of the meningococcus. The organism was agglutinated by Massachusetts and New York State polyvalent antimeningococcus serum in a dilution of 1 to 100. A brief outline of

From the Medical Clinic of the Peter Bent Brigham Hospital.

1. Dock, William: Intermittent Fever of Seven Months' Duration Due to Meningococcemia, J. A. M. A. **83**: 31 (July 5) 1924.
2. Marlow, F. W. Jr.: Meningococcemia, J. A. M. A. **92**: 619 (Feb. 23) 1929.
3. Chalier, J.; Giraud, P., and Morel, M.: Meningococcus B. Septicemia, J. de med. de Lyon **7**: 565 (Dec. 5) 1926.
4. Bloedorn, W. A.: Meningococcus Septicemia, Am. J. M. Sc. **162**: 881 (Dec.) 1921.
5. Jacono: Meningococcemia, Riforma med **40**: 755 (Aug. 11) 1924.
6. Binns, J. F., and Fothergill, L. D.: Meningococcus Septicemia, New England J. Med. **205**: 536 (Sept. 10) 1931.
7. I am indebted to Dr. J. M. Salles of New Bedford, Mass., for his permission to report this case. Dr. Salles was responsible for the care of the patient during the greater part of her illness.

serum therapy before admission was as follows: 40 cc. of Massachusetts State polyvalent antimeningococcus serum intravenously on the thirty-sixth day, with a severe reaction during the injection; from the thirty-sixth to the fifty-sixth day, 190 cc. of Lilly's concentrated polyvalent antimeningococcus serum and 848 cc. of Massachusetts serum subcutaneously in from 10 to 45 cc. doses; on the fifty-seventh day 51 cc. of New York State serum intravenously in seven doses; on the fifty-eighth day 16 cc. of a special lot of serum made at the Massachusetts State laboratory, subcutaneously in divided doses, followed by 90 cc. of the same kind of serum intravenously in doses of from 5 to 10 cc. during the next eight days.

Though there had been no appreciable effect on the temperature, an afebrile period of twenty-four hours, the longest observed, had occurred three days prior to admission. A few hours before entry the patient suddenly developed headache, and pain in the back and neck. It was feared that meningitis had developed, and the patient was sent to the hospital.

On admission the patient was well developed but slightly undernourished and fairly alert and cooperative. Except for a definite tache cérébrale, a soft precordial systolic murmur, and small fading, red-brown macular areas on the trunk, thighs and legs, the physical examination was not remarkable. The temperature was 102 F. Examination of the blood showed: hemoglobin (Talkqvist), 75 per cent; red blood cells, 4,800,000, and white blood cells, 11,300 per cubic millimeter; differential: polymorphonuclear leukocytes, 55 per cent; lymphocytes, 26 per cent; mononuclears, 13 per cent; eosinophils, 5 per cent, and basophils, 1 per cent. The platelets appeared normal but the red blood cells were slightly hypochromic. A blood culture on enriched mediums was sterile. Lumbar puncture was not performed. Massachusetts State polyvalent antimeningococcus serum was given intravenously as follows: 10 cc. shortly after admission, followed by slight pain in the lumbosacral region and flushing of the face; two doses of 15 and 20 cc. during the next twenty-four hours, 5 cc. on the second hospital day, 15 cc. on the third day, 5 cc. on the fifth day, and 8 cc. on the seventh day. The patient did not develop signs of meningitis or serum sickness. The temperature gradually receded to normal by the second day, and, except for an occasional rise to 99.5 F. during the next five days, remained at a normal level. The patient was allowed up on the thirteenth day and she has remained well since her discharge from the hospital on the twenty-second day.

CASE 2.—H. F., a girl, aged 17 years, admitted to the hospital, Aug. 29, 1933, complained of sore throat, painful joints and skin lesions.

The family history was unimportant and previous hygiene was good. At the age of 16 months the patient had acute poliomyelitis with residual paralysis of the left lower extremity. At the age of 9 years a tendon transplant operation was done. For several years she had worn a brace. In early childhood she had uncomplicated whooping cough, measles, mumps, chickenpox, and frequent spontaneous epistaxis. Menstruation began at 14 years and continued regularly with slight dysmenorrhea for three years. For one year prior to admission there had been metrorrhagia and recurring attacks of pain in the right side of the lower part of the abdomen. There was no history of venereal infection. The first attacks of tonsillitis occurred at 14 years with frequently recurring attacks, usually associated with a cold. Five weeks before entry there developed a blister on the left heel with slight infection, but it was completely well before the onset of her presenting illness.

One week before admission a cold and sore throat with cervical adenitis developed. This condition had partially subsided when, in the evening, twenty-four hours before entry, there was a slight chill followed by fever and a profuse sweat. All the joints seemed to be stiff. The following morning in addition to malaise, headache, sore throat and stiffness of the joints, numerous small, discrete maculopapular lesions were noted in the skin of the upper extremities. Some of these areas were painful.

The patient was well developed and nourished and appeared acutely ill. There were numerous red maculopapular lesions varying from 5 to 20 mm. in diameter on the arms and dorsum of both forearms. Some of these lesions were slightly nodular and did not fade on pressure. There were four petechiae, each approximately 2 mm. in diameter in which, over the course of the next twenty-four hours, gray centers rapidly developed, as shown in the accompanying illustrations. The petechiae were located over the right olecranon process, on the dorsum of the interphalangeal joint of the right thumb, on the ulnar side of the base of the right little finger, and on the dorsum of the left ring finger. These four lesions were considered to be definitely embolic in origin and were painful. Skin lesions were found only on the upper extremities, and the maculopapular lesions disappeared within twenty-four hours of admission without residual discoloration. No petechiae were seen in the conjunctivae, mucous membrane of the mouth, or under the nails. Smears of the petechia on the right thumb showed numerous pus cells but no organisms, and cultures on enriched mediums remained sterile. No new skin lesions developed. The four petechiae healed in five days with slight bluish discoloration.

Fig. 1.—On the dorsolateral surface of the left ring finger, a dark red petechia developed a gray center forming a pustule similar to that on the right thumb.

Examination also showed swelling and tenderness of the left index finger, and pain on flexion of the fingers of the right hand and on movement of the right wrist and left shoulder. The tonsils were large and acutely injected, but there was no exudate on the tonsils or posterior pharyngeal wall. The anterior cervical lymph nodes were enlarged and tender. The lungs were clear. The heart was normal except for an increased rate and a faint systolic murmur heard best at the left sternal margin in the fourth interspace. The spleen was not felt, nor was the area of splenic dulness increased. Pressure deep in the right lower abdominal quadrant caused slight pain. On bimanual pelvic examination there was tenderness in the right adnexal region, and a small mass regarded as the tube and ovary was palpated. The cervix was poorly visualized but there was a large amount of mucopurulent discharge from the vagina. Smears were negative for typical intracellular gram-negative diplococci, and culture of the pus grew only staphylococci. The gonococcus complement fixation test of the patient's blood was twice positive. These manifestations, in addition to the history of metrorrhagia and pain,

suggested pelvic inflammatory disease of gonococcic origin. There was atrophy, partial paralysis and shortening of the left lower extremity, with resultant scoliosis and deformity of the pelvis.

The temperature on admission was 101.4 F. (rectal). Hemoglobin (Sahli) was 85 per cent; red blood cells numbered 4,460,000 and white blood cells, 21,000 per cubic millimeter. The differential count showed polymorphonuclear leukocytes, 81 per cent; lymphocytes, 13 per cent, and mononuclears, 6 per cent. The platelets and red blood cells were normal in appearance. On four examinations of uncatheterized urine specimens a slightest possible trace of albumin, by the nitric acid ring test, and a small number of white blood cells were found. When the patient was admitted, a tentative diagnosis of septicemia was made. A blood culture taken at that time on beef infusion, dextrose broth and blood agar produced a growth of a gram-negative diplococcus in all four flasks of the liquid medium at the end of ninety-six hours. The solid medium remained sterile at the end of fourteen days. The organism from the first subculture was agglutinated by both the New York and the Massachusetts State polyvalent antimeningococcus serum in a dilution of 1 to 80. In a dilution of 1 to 160 there was slight agglutination with New York State

Fig. 2.—A dark red petechia on the dorsum of the interphalangeal joint of the right thumb became raised, rounded and developed a gray center, forming a pustule.

serum. Controls with normal horse serum and Parke, Davis polyvalent antigonococcus serum showed no agglutination. Incubation was maintained for one hour at a temperature of 50 C. A control with the patient's serum against a known culture of meningococcus was not carried out. The isolated organism showed other characteristics of the meningococcus. It did not grow at room temperature; it grew poorly in subcultures and only on enriched mediums; it fermented both dextrose and maltose but did not ferment saccharose and lactose.

About twenty-four hours after admission the patient complained of pain in the right thigh. There developed a diffuse swelling with induration, redness, and tenderness on the lateral aspect of the right thigh. There was no fluctuation, and roentgen examination showed no soft tissue destruction or abnormalities of the femur. This condition subsided in four days. The temperature rose to 102 F. on the fourth day, having reached normal on the morning of the third day. On the fifth day the temperature was 101 F. but for the following eleven days ranged between 98 and 100 F. From the third to the eighth day 8 Gm. of sodium salicylate was given daily. There were migratory joint pains in the fingers and knees, and migratory swelling, redness and tenderness of the fingers persisted for several days. On numerous occasions, pain and tenderness over the long bones was noted. On the twelfth day the patient developed nonprojectile vomiting, unaccompanied by nausea or headache. Fluids were given subcutaneously, and gastric lavage was done with slight improvement. Repeated examinations showed no positive neurologic signs, excepting the old paralysis of the left lower extremity. Antimeningococcus serum therapy was deliberately withheld because the temperature was practically normal, the white blood cell count was only slightly elevated, and there were no longer definite signs of blood stream infection. A blood culture taken on the twelfth day was sterile. The cause of the vomiting could not be determined. On the morning of the seventeenth day the patient noticed diplopia. A thorough neurologic examination showed no changes. The temperature was only 100 F., but the white blood cell count had increased from 13,000 to 21,000 per cubic millimeter. With the possibility that the diplopia and vomiting were signs of early meningitis, a lumbar puncture was performed, with completely negative spinal fluid examination. However, 20 cc. of New York State antimeningococcus serum was given intrathecally, 40 cc. intravenously, and 20 cc. intramuscularly. Two days later 65 cc. was given intravenously and 15 cc. intramuscularly. On the three following days 20, 60 and 60 cc., respectively, was given intravenously. The day following the last injection of serum moderately severe serum sickness developed, lasting about twelve days. The diplopia and vomiting disappeared in two days after serum therapy was instituted. After recovery from serum sickness the patient was considered to be well. However, there was vomiting on two occasions following dietary indiscretion shortly before her discharge from the hospital forty-three days after admission.

The patient was readmitted to the hospital three weeks later with another attack of acute tonsillitis. She had been fairly well during the interim but had occasionally vomited after meals. Except for the absence of skin lesions, joint involvement and evidence of pelvic inflammatory disease, the physical examination was the same as on the first admission. The temperature was 102 F. (oral) but returned to normal in eighteen hours. The white blood cell count was 15,000 per cubic millimeter and the hemoglobin and red blood cell count were unchanged. Lumbar puncture gave normal results. Blood culture and the gonococcus complement fixation test were negative. Throat and nose cultures showed no significant organisms. A smear from the cervix uteri was negative for intracellular gram-negative diplococci. The sore throat quickly subsided, and the patient was discharged from the hospital in one week.

There were at least three subsequent mild attacks of tonsillitis until tonsillectomy was performed, Dec. 28, 1933, under local anesthesia. The patient is being followed in the outdoor department and has remained well, except for occasional vomiting after meals, unaccompanied by nausea or pain. Gastric analysis and roentgen examination of the gastro-intestinal tract by barium meal and enema were normal. The cause of the vomiting is believed to be psychic.

COMMENT

The first case is a classic example of chronic meningococcemia with the triad of intermittent chills and fever, arthralgia and skin eruptions. A total of 1,275 cc. of specific polyvalent antimeningococcus serum was administered intravenously and subcutaneously, with ultimate recovery of the patient. In view of the tendency of many patients with meningococcemia to recover spontaneously, failure to obtain immediate improvement with serum therapy in this case prevents one from concluding that there was any beneficial effect.

In the second case the onset of a chill, fever, joint pains and petechiae accompanying an acute infection of the upper respiratory tract suggested a septicemia. This opinion was confirmed by growing the meningococcus in the blood culture taken twenty-four hours after the onset of symptoms. Subsidence of the acute symptoms suggested beginning spontaneous recovery before serum therapy was instituted. However, in the early stages of chronic meningococcemia there may be

afebrile asymptomatic periods of several days' duration. It is therefore possible that fever and chills of chronic meningococcemia would have developed had serum been withheld longer. Serum therapy that appears successful may fail to eradicate the infection completely. Specific serum was administered in one reported case [1] but fulminating meningitis developed nine months after apparent recovery from a meningococcemia with intermittent fever of two months' duration.

The one death in our four cases was due to terminal meningitis, which developed after seven months of intermittent fever. Antimeningococcus serum was not given, because the isolated organism was thought to be a gonococcus.

Although beneficial effects of specific serum therapy in meningococcemia are not always demonstrable, it is believed that intensive intravenous treatment with polyvalent antimeningococcus serum should be given, regardless of the course of the symptoms or the inability to isolate or agglutinate the organism.

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TOXIC CIRRHOSIS OF THE LIVER

REPORT OF A CASE DUE TO LONG CONTINUED EXPOSURE TO CARBON TETRACHLORIDE

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Many chlorinated hydrocarbons have a toxic action on the liver. Of these, chloroform ($CHCl_3$) is the best known. Carbon tetrachloride (CCl_4) is closely related chemically to chloroform and likewise is a hepatic poison. Because of its noninflammable character and because it is an excellent solvent for fats and greases, it is extensively used in industry.[1] It has been introduced into the home as a fire extinguisher and a dry cleaner under the trade names of "Pyrene" and "Carbona." It is sometimes used by hairdressers as a dry shampoo. It has supplanted such inflammable liquids as naphtha and gasoline in many commercial dry cleaning plants. It is widely used in medicine as a vermifuge in the treatment of hookworm disease.

Many cases of acute poisoning have now been recorded following the inhalation of the fumes of carbon tetrachloride.[2] This may produce only a slight dizziness or nausea, but in severe cases death ensues. Occasionally after oral administration as a vermifuge a lethal quantity has been absorbed from the bowel.[3] In many of these fatal cases death is due to an acute toxic necrosis of the liver with the clinical picture of acute yellow atrophy. Several investigators, among them Gardner, Lamson and their co-workers,[4] have reported the experimental production in animals of acute hepatic injury by the administration of carbon tetrachloride, either orally, intravenously or by inhalation, so that the substantial identity of the clinical and the experimental lesions is accepted.

In addition to this acute injury, Bollman and Mann [5] have shown that hepatic cirrhosis can be produced in dogs by the repeated administration of small doses of carbon tetrachloride over a prolonged period of time. This observation of Bollman and Mann has since been confirmed by Lacquet,[6] Higgins [7] and Hartman.[8] The clinical counterpart of the latter condition, that is, chronic carbon tetrachloride poisoning with hepatic cirrhosis, has not previously been reported so far as we have been able to determine. Butsch [9] has described a case in which ascites developed in a man after he was exposed, over a period of six months, to the fumes of carbon tetrachloride while cleaning telephone parts. In addition to the ascites there was a definite lipemia and a great increase in the cholesterol content of the serum, such as Rosenthal and Lillie [10] and McMahon and Weiss [11] found associated with acute carbon tetrachloride poisoning in experimental animals and in human beings. There were no other clinical manifestations, and various tests for hepatic function gave normal responses. The observations in the case of

Fig. 1.—Gross specimen, showing nodular surface and lobulations of cut surface.

Butsch are suggestive of cirrhosis but not conclusive, for the possibility of a subacute toxic injury of the liver cannot be entirely excluded.

In the present case the history, the physical signs and the laboratory observations were sufficient to permit the diagnosis of cirrhosis of the liver, this diagnosis being confirmed at necropsy. The history in reference to carbon tetrachloride is highly significant.

REPORT OF CASE

History.—A man, aged 46, an Italian, presented himself at the hospital, May 10, 1933, because of "swelling of the stomach" of three months' duration.

For the past eleven years the patient's occupation had been that of a cleaner of clothes. His work consisted of washing

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clothes in an open receptacle in a small, poorly ventilated room. The cleaning fluid used since 1928 was a mixture of 55 per cent of carbon tetrachloride and 45 per cent of naphtha and benzine. During this period many other men had attempted to work with him, but none could continue because they soon became ill, with loss of appetite, diarrhea and vomiting. One worker, according to the patient, had "turned yellow." Many times during this period the patient had had spells of nausea and vomiting and had had severe vertigo when he worked with the cleaning fluid for any period of time. He insisted that although he occasionally had wine to drink with his meals, he

Fig. 2.—Cross section under low power, showing lobulations and infiltration of connective tissue.

never drank spirituous liquors. The rest of the past history was unimportant.

He had had difficulty for three years with what he termed "gas on the stomach." Flatulence and a sensation of epigastric fulness and distention followed the ingestion of food and was temporarily relieved by catharsis and occasionally by sodium bicarbonate. He had had dull aching pains, localized in the right upper quadrant of the abdomen for a year. This usually appeared after a heavy meal or after eating greasy food. Three months before admission this pain had been more severe and he noticed that there was considerable tenderness over the area of pain. Coincident with the onset of tenderness and increase in pain, the abdomen began gradually to increase in size. He had occasional epistaxis. Constipation and gas formation were marked. He also noted that, while his weight had remained stationary, his arms, face and chest had become thinner. He felt tired all the time and did not have enough strength to work.

Physical Examination.—The patient was dark complexioned and had a quite sallow appearance; he was 5 feet 5 inches (165 cm.) tall and weighed 151 pounds (68.5 Kg.) (standard weight for height and age is 139 pounds, or 63 Kg.). The sclerae were slightly but definitely icteric in tint. The lips and mucous membranes were slightly cyanotic. The face and arms were thin and contrasted markedly with the distended abdomen. The latter was flat on percussion throughout and had a marked fluid wave. The liver was palpable four fingerbreadths below the costal margin and was very firm. The spleen was palpable by ballottement three fingerbreadths below the costal margin. There was some venous enlargement in the superficial veins of the abdominal wall both anteriorly and posteriorly. The abdominal circumference was 39 inches (98.5 cm.). The blood pressure was 110 systolic, 70 diastolic. The rest of the examination was normal.

Laboratory Examination.—The fluid intake was limited to about 1,000 cc., the actual intake varying from 880 to 1,240 cc. Under these conditions the daily output of urine varied from 500 to 900 cc., with a specific gravity varying between 1.020 and 1.027. Individual urine specimens contained traces of protein and urobilin but were otherwise normal. Bile was not present.

There was a moderate degree of anemia, the hemoglobin being 73 per cent (Sahli); the erythrocytes numbered 3,810,000, and the leukocytes 7,300, with a normal differential count.

The chemical analysis of the blood revealed a blood urea nitrogen of 12.1 mg., sugar 82 mg., cholesterol 167 mg. and cholesterol esters 77 mg. per hundred cubic centimeters. The icterus index was 15 but the serum bilirubin was less than 2.0 mg. The van den Bergh reaction was indirect.

The galactose tolerance test, May 16, with 40 Gm. of galactose, gave a urinary excretion of 1.7 Gm. June 3, the excretion was 2.3 Gm. The bromsulphalein test, May 11, showed a retention of 30 per cent at the end of half an hour.

Gastric analysis showed the presence of free hydrochloric acid. Biliary drainage was done on several occasions. Concentrated specimens of bile were obtained each time; no crystals were in the sediment, and cultures of the bile were sterile.

Progress.—The patient was placed on a high carbohydrate, salt-free diet with limitation of the intake of fat and protein. Because of the work of Minot and Cutler [12] showing the beneficial effects of calcium administration in dogs with carbon tetrachloride poisoning, 60 grains (4 Gm.) of calcium lactate was given twice a day. Before mersalyl was given, ammonium chloride was administered in daily doses of 9 Gm. May 31, a dose of 1 cc. of mersalyl (salyrgan) was given intravenously. The urinary output was 1,500 cc. that day and 1,200 cc. on each of the two succeeding days. June 3, a second injection of mersalyl was given with a diuresis of 2,000 cc. during the following twenty-four hours.

There was marked improvement while the patient was in the hospital. He felt much stronger. The girth of the abdomen decreased to 33 inches (84 cm.). The weight decreased from 151 pounds to 134 pounds (61 Kg.). With the disappearance of the ascites, the liver and spleen could be palpated with ease, the apparent size being the same as on admission. The patient was discharged from the hospital in good condition after twenty-five days.

The patient continued to improve in strength for several months, was free from edema and was able to do light work. Examination in September indicated that the liver was palpable at the costal margin, while the spleen could no longer be felt. September 20 a bromsulphalein test showed a retention of 50 per cent of the dye at the end of thirty minutes, suggesting that the hepatic lesion was progressive. About this time, and contrary to medical advice, he returned to work at cleaning

Fig. 3.—Cross section under high power, showing swollen liver cells, leukocytic infiltration and cutting off of cell groups by invading fibrous tissues.

clothes and was again exposed to fumes of carbon tetrachloride. A few weeks later he began to have "gas" and abdominal distress after eating, and the abdomen became progressively larger. November 7 his weight was 144 pounds (65 Kg.) and examination showed the presence of a moderate degree of ascites. He was again given ammonium chloride and a series of injections of mersalyl. The diuretic response was unsatisfactory, and the ascites became progressively more marked. November 23 he was readmitted to the hospital. His

12. Cutler, J. T.: The Influence of Diet on Carbon Tetrachloride Intoxication in Dogs, J. Pharmacol. & Exper. Therap. **45**: 209-226 (June) 1932. Minot, A. S., and Cutler, J. T.: Guanidine Retention and Calcium Reserve as Antagonistic Factors in Carbon Tetrachloride and Chloroform Poisoning, J. Clin. Investigation **6**: 369 (Dec.) 1928.

weight was 145 pounds (65.8 Kg.). Abdominal paracentesis of 9,000 cc. of clear, straw-colored fluid was done. When discharged the following day his weight was 136 pounds (61.7 Kg.). The paracentesis gave temporary relief but the ascites recurred within a few days and could no longer be controlled by medical means. He was readmitted to the hospital and a second paracentesis was done, December 12, 3,500 cc. of fluid being removed. Following paracentesis, 2 cc. of mersalyl was given intravenously. The fluid intake the succeeding twenty-four hours was 1,000 cc. and the urine output 2,000 cc. In spite of frequent injections of mersalyl following his discharge from the hospital, the ascites recurred. The patient was readmitted to the hospital and a paracentesis of 6,000 cc. was done, December 28.

Because of the inability to control the ascites further by medical therapy, an exploratory laparotomy was decided on. It was performed by Dr. Erdmann, December 29. A large amount of ascitic fluid was present in the peritoneal cavity, the liver was markedly cirrhotic, and the spleen was hypertrophic. A splenectomy was done and the omentum implanted into the abdominal wall.

Following the operation the patient did not rally. The pulse and temperature became progressively elevated and he died three days after operation.

At necropsy, advanced hepatic cirrhosis, postoperative hemorrhage and old infarcts of the right kidney, with compensatory hypertrophy of the left kidney, were found.

Pathologic Examination.—The spleen weighed 600 Gm. and measured 205 by 100 by 51 mm. It appeared to be slightly firmer than normal. On section the pulp was bright red with a few gray streaks. The follicles were not conspicuous.

Microscopic examination showed the splenic follicles to be 1 to 2 mm. in diameter and rather inconspicuous in the hypertrophied spleen. The enlargement of the spleen was due chiefly to dilatation of the venous sinuses and an increase of reticulum in the walls of these sinuses. They were rather stiff, so that they remained distended in the fixed specimen. There was also an increase of fibrous tissue and apparently of smooth muscle in the capsule of the spleen and in the trabeculae that extended into its substance. The cellular structure appeared not to be disturbed qualitatively. Our pathologic diagnosis was splenomegaly of chronic passive congestion.

The liver measured 15 by 21 by 7 cm. and weighed 1,135 Gm. (fig. 1). Its surface was irregularly nodular, the individual nodules varying from 5 to 10 mm. in diameter, raised from 2 to 4 mm. above the liver surface. They were grayish brown to reddish brown and were separated by irregular branching strands of grayish white tissue. The capsule was smooth and glistening. On section the organ cut with a well marked increase in resistance. The cut surface consisted of irregular islands of grayish brown parenchyma surrounded by diffusely branching strands of connective tissue.

Microscopic examination showed the external capsule of the liver to be about 0.5 mm. in thickness, with very coarse bands of connective tissue extending from it into the substance of the organ. These bands entirely surrounded small lobules of hepatic tissue in some places (fig. 2). The strands of fibrous tissue in some places were richly infiltrated by abundant lymphocytes. The bile ducts were slightly increased in number. Occasionally they contained small clumps of exfoliated epithelial cells, but on the whole the bile ducts appeared normal and there was no evidence of excessive inflammatory infiltration about them. The change in the liver appeared to be due to destruction of the hepatic cells, with a compensatory hyperplasia of the remaining hepatic elements. In this way numerous small lobules, which were highly irregular in shape and which were partly or entirely surfounded by bands of connective tissue more or less richly infiltrated by lymphocytes, had been formed (fig. 3). The hepatic cells themselves appeared to be larger than normal and occasionally contained giant nuclei. Our pathologic diagnosis was chronic hepatitis and cirrhosis.

COMMENT

The patient presented sufficient evidence for the clinical diagnosis of hepatic cirrhosis and this diagnosis was confirmed at necropsy. The various agents that have been suggested as possible causes of cirrhosis are legion. The experimental production of hepatic cirrhosis in animals by chronic intoxication with carbon tetrachloride has been amply proved. The patient was exposed to the fumes of carbon tetrachloride over a prolonged period and it seems reasonable to conclude that, while the amounts inhaled were insufficient to produce a violent toxic reaction at any one time, they nevertheless caused a diffuse destruction of hepatic tissue with resultant fibrosis and cirrhosis. In view of the history and in the absence of evidence implicating other etiologic factors, we believe that this case represents the clinical counterpart of the experimental lesions previously referred to and therefore is a valid example of hepatic cirrhosis due to chronic poisoning by carbon tetrachloride.

Exposure to the fumes of carbon tetrachloride in the dry cleaning of clothes, as pointed out recently,[13] is quite common. When this practice is carried out at home under usual conditions, only small amounts of cleaning solution are used, ventilation is adequate and the exposure is occasional and of short duration. In commercial practice, on the other hand, large quantities of carbon tetrachloride are used and, unless ventilation is adequate and care is taken to prevent inhalation of fumes by the workman, may involve frequent or continuous exposure to the fumes over prolonged periods.

The industrial hazards associated with the use of carbon tetrachloride have recently been reviewed by McCord,[14] who stresses the danger of acute poisoning. The present case demonstrates that, with exposure to the fumes over a prolonged period, chronic poisoning may develop as an additional industrial hazard.

13. Volatile Poisons in the American Home, editorial, J. A. M. A. **101**:1238-1239 (Oct. 14) 1933.

14. McCord, C. P.: Carbon Tetrachloride: A Nontechnical Discussion of Its Toxicity, Indust. Med. **1**:151-157 (Dec.) 1933.

A TYPICAL HEREDITARY SYNDROME

DYSTROPHY OF THE NAILS, CONGENITAL DEFECT OF THE PATELLA AND CONGENITAL DEFECT OF THE HEAD OF THE RADIUS

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Turner [1] has reported the very interesting history of two families in both of which "arthrodysplasia" associated with dystrophy of the nails has occurred as a dominant mendelian character through four generations. The author attempted to clarify the facts from a genetic point of view. Probably he was not familiar with the literature on the association of dystrophy of the nails with skeletal anomalies, since he suggested one pathologic hereditary factor for his first family in which all the affected members showed both anomalies. For the other family, in which several members presented only dystrophy of the nails, he postulated two different pathologic factors, one of which (the factor for arthrodysplasia) manifested itself only when the other factor was also present. Besides, the author thought there was a possibility that there existed a third factor, which, whenever it was present, inhibited the factor for arthrodysplasia, so that only the nail dystrophy would be manifested in cases of this kind.

From the First Medical Department (Prof. Julius Bauer) of the Policlinic of Vienna.

1. Turner, J. W.: An Hereditary Arthrodysplasia Associated with Hereditary Dystrophy of the Nails, J. A. M. A. **100**:882 (March 25) 1933.

There are two very important reasons against this hypothesis of Turner's. First, one cannot assume essentially different laws for the representation of hereditary characters in the genotype (that is, the sum of all the potential hereditary factors present in the fertilized ovum) in different families. A factor may be more prevalent in one family and less in another; this is perfectly true and may often be observed. However, to believe that a phenotypic hereditary attribute that is represented once by only one genotypic unit might be represented in another case by several different factors in the same species would be contrary to all hitherto known laws of experimental and human genetics. Therefore, whenever a hypothesis is constructed on the genotypic representation of phenotypic characters in human pathology, one explanation must be sought that will be satisfactory for all the observed facts.

The second reason why I cannot agree with Turner's concept is that if two factors are assumed for all the cases, the fact must be explained that usually the two anomalies are inherited together as if they were one. The author tried to explain this by the hypothesis that the factor for the skeletal condition would be manifested only when the factor for the nail anomaly was also present. This assumption is not consistent with a large number of observations in analogous cases in the literature.

When Turner stated that the deformity he described had "never been reported previously," he was right as far as the specific joint anomalies with their different details were concerned. He overlooked, however, several cases in the literature, which I shall refer to later. As a matter of fact, a number of very similar observations have been known. The striking characteristics of Turner's cases are: (1) disorders of the nails varying from the total absence of the nail to one that is only a little thinner than normal, always affecting more severely the thumb nail and becoming less marked toward the little finger; (2) defect or at least severe hypoplasia of the patella and large internal condyle of the femur; (3) deformities of the elbow, large prominent internal condyle and other more trivial anomalies of the humerus. In regard to the head of the radius, the author admitted only that it was unusually small, but it is evident from the roentgenograms (fig. 4 in Turner's paper) that there was also a luxation of the head of the radius; (4) hypoplasia of the scapula and of the features of the head of the humerus; (5) slight congenital deformities of the hip joints and anomalies of the ankles, the malleoli being enlarged and the internal one being larger than the external one.

Three of these anomalies and the three most striking ones form in themselves an already well known syndrome; that is, anonychia with congenital defect of the patella and congenital luxation of the head of the radius. The latter need not be present, as there exists also a large number of cases in which only the defect or hypoplasia of the patella is associated with the defect of the thumb nail. This association—obviously the slightest form of this syndrome—is a typical one and is usually found in several members of the same family. The two anomalies are inherited together, so that usually the affected members are afflicted by the two at the same time. Still, there are rare exceptions: individuals who may show only the one or the other defect.

In 1928 in the course of a study on genetics of the human skeletal system I [2] was able to gather from the literature the history of eight families in which congenital defect or hypoplasia of the patella was inherited through several generations. Incidentally, I wish to mention that when I refer to the defect of the patella I mean the isolated one in which the neighboring bones are intact—a rather rare anomaly. In cases of a defect of one or more of the long bones of the leg, the patella is very often lacking too, but these cases are not of interest here. Among the eight families with hereditary isolated congenital absence of the patella there were three [3] in which the bone defect was associated with a hereditary defect of the thumb nails in all the affected members of the family. As far as I could ascertain (Little's [3] paper in the original was not accessible), the two anomalies always occurred together in the same individual, with one single exception. In the case described by Rubin,[3] a boy whose patella was absent had perfectly well developed nails. His sister and mother were afflicted by both deformities and his maternal grandmother had had no thumb nails but there was nothing known about the patellas. At that time I was concerned only with hereditary anomalies of the bones and so I did not mention a case of Most [4] with defect of the thumb nails and only rudimentary development of the other nails in a child, in four of his sisters and brothers, in his father, in the five paternal uncles and in the paternal grandmother. The child showed, among other deformities that do not belong to the syndrome here discussed (clubfoot on one side, talipes calcaneovalgus on the other, contracture of the hip and knee joints and so on, which probably are at least partly due to exogenous causes, being present only occasionally in the same individual), a congenital defect of the patella, which of course was not due to exogenous factors. The other members of the family with anonychia were not examined. It seems rather probable that at least in some of them the patella was also lacking. This is the more plausible as it is known that a defect of the patella may not produce any disturbances for the individual and very often he does not even know about this defect.

Since my publication I have come to recognize, in addition to this typical duality—defect of the patella and thumb nail—a somewhat broader syndrome. There exist a few more families in which is inherited not only the defect of the thumb nail but also the dystrophy or partial defect of the other nails, as shown in the case of Most. There is not only defect of the patella but also other anomalies of the joints, particularly luxation of the head of the radius and other less striking, less constant and less characteristic deformities. The first of these cases had been reported before my first paper on this subject was published. As this was the only case known at the time, the association of anomalies as a typical syndrome did not occur to me. It was Trauner and Rieger [5] who published this pedigree with congenital luxation of the head of the radius and dystrophy of the nails in six members of four generations. One of the patients also had a hypoplasia

2. Aschner, Berta: Ztschr. f. Konstitutionslehre, **14**: 129 (June 8) 1928. Aschner, Berta, and Engelmann, Guido: Konstitutionspathologie in der Orthopädie, Berlin, Julius Springer, 1928.

3. Little, cited by Rubin, George: Congenital Absence of Patellae, J. A. M. A. **64**: 2062 (June 19) 1915. Wolf: München. med. Wchnschr., 1900, p. 766.

4. Most, A.: Allg. med. Centr.-Ztg., 1903, p. 153.

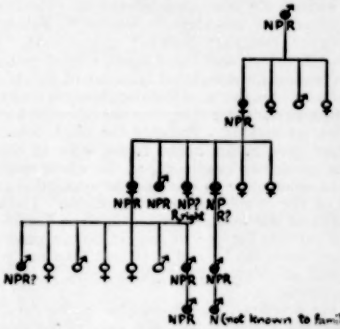
5. Trauner, R., and Rieger, H.: Family with Six Cases of Congenital Dislocation of Radius and Identical Anomalies of Finger and Knee Joints and Nails, Arch. f. klin. Chir. **137**: 639, 1925.

of the patella. In addition, there were signs of slight arthrosis deformans [6] of the knee joints and a camptodactylia (congenital contraction of the fifth and fourth finger) which were inherited in this family. Later on, Oesterreicher [7] observed a case in which eleven members in five generations of the same family were affected with congenital defect of the thumb nail and the patella. The latter was not quite certain in two of them. In seven members there were also to be found a deformity and congenital luxation of the head of the radius on both sides; in one individual this was present only in the right arm and in three others it was not known whether there was also a deformity of the elbow joint or not. The anomaly of the joints alone did not occur in that family, as shown in the accompanying diagram. It was only a short time ago that I learned of the two more analogous pedigrees of Turner's.

Having related all the facts that it has been possible to obtain to date regarding this syndrome, I shall try to explain the genetic connections and reasons for the phenotypic facts, searching of course for a supposition that will explain satisfactorily all the observations that have been made. As I was aware of only the typical association of the defect of the patella and thumb nail in 1928, I assumed two different pathologic genotypic factors that were responsible for these two anomalies, since each of them might occur alone without the other. In my own table, previously mentioned, I quoted five families in which only a defect of the patella was inherited, the nails being perfectly normal. On the other hand, I know from the literature quite a number of cases of hereditary dystrophy and defect of the nails (Tobias,[8] Ebstein,[9] Pires da Lima,[10] Hofmann [11] and others), in some families associated with congenital alopecia (Nicolle and Halipré,[12] Barrett,[13] Jeanselme and Rimé,[14] White,[15] Jacobsen [16] and others) but without any skeletal anomalies in the whole family. It is therefore obvious that there must exist at least two separate pathologic factors in the genotype, so-called genes, which produce the two anomalies.

The next problem is Why do these deformities occur so frequently together and why are they, once they are both present in a family, always inherited together with very rare exceptions, almost as if they were one factor? For the explanation of the latter fact I previously assumed a linkage between the two genes, which means that they would be situated in the same chromosome. It is known from experimental biology that genes localized in the same chromosome are inherited together like one unit, with a few exceptions, which are caused by certain irregularities in the mitotic division of cells, the so-called crossing over. T. Morgan and his school have studied these relations for a great many characters of Drosophila with excellent success, and they were able to plot a geographic map of the situation of many genes in the chromosomes of Drosophila. Of course, knowledge is still far distant from that exactitude in human pathology. Since the fundamental laws of heredity are naturally the same for all kinds of individuals whose cells undergo mitotic division, it is obvious that linkage must also play a big rôle in the heredity of man. This results from the very fact that the number of different genes or hereditary units in man is an enormously large one, while the number of chromosomes probably is twenty-four, or may even be only twelve, and therefore every chromosome must necessarily contain a great many different genes, which are consequently linked together. One example of linkage in man is known for sure: that is, the so-called sex-linked characters. In view of this, one certainly has a right to assume a linkage between the two pathologic genes in question.

There is still another problem to be solved. It is understood why the two anomalies, once being present in an individual are inherited together. But why are they to be found so comparatively often in the same family? With such rare deformities as these two, it cannot be merely chance if out of eight families with defect of the patella three are also affected by the defect of the thumb nails or, if Most's case and the others with the whole syndrome are counted, there are seven families among twelve showing both anomalies. In order to understand this better, one might ask the question: If, for example, an individual with a congenital defect of the patella contains in his genotype a gene producing this anomaly, what is to be found instead in the genotype of a normal individual? This must include somewhere the normal "allelomorph" of that pathologic unit which is a gene for the right development of the patella. In an analogous manner one must conclude, of course, that a physiologic gene exists for the normal development of the nails in the genotype. If one of these factors is altered in a certain way, the pathologic gene in question occurs. Now the problem may be considered like this: Why are these two normal genes so often and easily altered at the same time? Julius Bauer had assumed that different genes have the more probability to show pathologic mutations at the same time, the closer they are localized together within the chromosome, as any damage occur-



Oesterreicher's pedigree: *P*, defect of the patella; *N*, defect of the thumb nails; *R*, luxation of the head of the radius.

6. This expression is now generally used in the German literature to characterize the degenerative, consumptive processes of the joints in opposition to the inflammatory ones.
7. Oesterreicher, W.: Ztschr. f. Konstitutionslehre **15**: 465 (Sept. 22) 1930.
8. Tobias, Norman: Hereditary Familial Dystrophy of the Nails, J. A. M. A. **84**: 1568 (May 23) 1925.
9. Ebstein, E.: Dermat. Wchnschr. **68**: 113, 1919.
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11. Hofmann, F.: Arch. f. Dermat. u. Syph. **89**: 381, 1908.
12. Nicolle, G., and Halipré, A.: Ann. de dermat. et syph. **6**: 675, 1895.
13. Barrett, A. M.: Hereditary Occurrence of Hypothyroidism with Dystrophies of the Nails and Hair, Arch. Neurol. & Psychiat. **21**: 628 (Dec.) 1919.
14. Jeanselme and Rimé: Bull. Soc. franç. de dermat. et syph. **31**: 79, 1924.
15. White, C. J.: J. Cutan. & Gen.-Urin. Dis. **14**: 220 (June) 1896.
16. Jacobsen, A. W.: Hereditary Dystrophy of the Hair and Nails, J. A. M. A. **90**: 686 (March 3) 1928.

ring to one of them and changing it into its pathologic allelomorph may most easily involve its nearest neighbors. So I postulated in 1928 that the genes for defect of the patella and the thumb nail were not only linked together in the same chromosome but are even very near neighbors to one another within the chromosome. This seems to me the more plausible, as it is known indeed from Morgan's studies that every gene has its own particular place within the chromosome and that linked genes, the closer they are placed together, show a less frequent tendency to be separated by crossing over. Since crossing over is very rare in my case, a very near relationship must be assumed. This hypothesis of the very close neighborhood between the two linked factors in question entered into the American literature through my chief, Julius Bauer,[17] who has discussed this concept in several lectures.

There is no difficulty whatever in explaining the new facts that have been learned from the observations of Trauner and Rieger, Oesterreicher and Turner. Here is an additional third constant, hereditary symptom, the luxation of the head of the radius. This deformity has been observed occurring as a hereditary anomaly alone without the other two deformities (Hoeftmann-Weszkalnys,[18] Weszkalnys,[18] Servier,[19] Princetau,[20] von Sury,[21] Dencks,[22] Sieber [23] and others). It is obvious, therefore, that there exists a third pathologic factor causing the congenital luxation of the head of the radius. This factor is likewise closely linked to the other two, as the three symptoms are inherited together with few exceptions. Probably the neighborhood of this third gene to the others is not quite as close as the one previously mentioned, as the whole syndrome does not occur quite so often as the association of the defect of the thumb nail and the patella. The other anomalies of the joints described in these families are far too variable for one to analyze certain genes, and not much more can be said at present than that a constitutional inferiority of the joints seems to belong to this syndrome.

As the hereditary camptodactylia in the family of Trauner and Rieger is also seen only in the members affected with the syndrome, it may be assumed that this pathologic gene, which is inherited together with the others, is localized in the same chromosome but is not in an unusually close contact with them. I should not be surprised to find, occasionally, in families with such obvious anomalies in the germ plasm other signs of constitutional deviation as well. Accordingly, it has been seen that in Oesterreicher's family there are quite a number of neuropathic and psychopathic individuals.

I hope I have shown that my assumption—linkage with close neighborhood of the linked characters of several different hereditary pathologic factors — can satisfactorily explain all the clinical data and facts that are known up to the present about the pathologic condition here discussed. Turner's hypothesis could never explain either the cases with hereditary defect of the patella alone or the families with congenital luxation of the head of the radius without dystrophy of the nails. Trauner and Rieger, in discussing only their own pedigree, assume for this case a polyphenia that means one single hereditary unit in the genotype which produces several different and disconnected signs in the phenotype. Such a polyphenic pathologic factor would certainly clarify the case of Trauner and Rieger, but it would not account for all the other observations as, in the case of polyphenia, the singular phenotypic symptoms could never occur separately. On the contrary, whenever one of them is present, the others have to be there too. I hope that I have succeeded in showing clearly that each of the symptoms may occur alone and independent as a hereditary character, as well as two or three joined together.

It is rather curious, therefore, that even Oesterreicher, who is well acquainted with the related literature, accepts the hypothesis of polyphenia. In my opinion this may be understood by the fact that this author, a neurologist, did not feel sufficiently secure in genetics to form an opinion of his own in regard to the genotypic connections of the observed symptoms. He therefore sought the advice of Paula Hertwig, the biologist. Hertwig, on the other hand, was naturally not familiar enough with the clinical facts, which would make a polyphenia impossible. She derived her theory chiefly from the striking cases presenting the whole syndrome, and she argued that a linkage was not probable because that would not explain why the two linked genes should show a pathologic mutation so frequently at the same time. This difficulty is resolved by the assumption of the very close neighborhood in the chromosome. When Oesterreicher declines the linkage on account "of the impossibility of an exact proof in man," it seems rather strange, as the proof cannot be any more exact for the polyphenia than for any other genotypic connection in man. It is rather more likely that a proof can be found for the linkage, as I have already shown that the existence of linkage even in man is very plausible and quite sure for the sex-linked characters. It must not be forgotten that the scientific methods of genetics in man are quite different from those of experimental biology, and only a clinician well acquainted with clinical facts and familiar as well with the biologic laws and progresses of genetics will be able to solve the problems of human genetics.

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18. Cited by Hoffa, Albert: Lehrbuch der Orthopädie, Stuttgart, F. Enke, 1902.
19. Servier: Gaz. hebd. de méd. **20**, 1872.
20. Princetau: J. de méd. de Bordeaux **37**: 612, 1907.
21. von Sury, K.: Cor.-Bl. f. Schweiz. Aerzte **39**: 79, 1909.
22. Dencks, G.: Zentralbl. f. Chir. **52**: 1010 (May 9) 1925.
23. Sieber, H.: Ztschr. f. orthop. Chir. **46**: 535, 1925.

Calmness Amid Storm.—In the first place, in the physician or surgeon no quality takes rank with imperturbability, and I propose for a few minutes to direct your attention to this essential bodily virtue. Perhaps I may be able to give those of you, in whom it has not developed during the critical scenes of the past month, a hint or two of its importance, possibly a suggestion for its attainment. Imperturbability means coolness and presence of mind under all circumstances, calmness amid storm, clearness of judgment in moments of grave peril, immobility, impassiveness, or, to use an old and expressive word, phlegm. It is the quality which is most appreciated by the laity though often misunderstood by them; and the physician who has the misfortune to be without it, who betrays indecision and worry, and who shows that he is flustered and flurried in ordinary emergencies, loses rapidly the confidence of his patients. In full development, as we see it in some of our older colleagues, it has the nature of a divine gift, a blessing to the possessor, a comfort to all who come in contact with him. You should know it well, for there have been before you for years several striking illustrations, whose example has, I trust, made a deep impression. As imperturbability is largely a bodily endowment, I regret to say that there are those amongst you, who, owing to congenital defects, may never be able to acquire it. Education, however, will do much; and with practice and experience the majority of you may expect to attain it to a fair measure.—Sir William Osler.

Clinical Notes, Suggestions and New Instruments

PREVENTION OF SCARLET FEVER

MATTHEW MOLITCH, M.D., JAMESBURG, N. J.

There is still present, in the minds of many general practitioners, a doubt of the value of immunization against scarlet fever. In the New Jersey State Home for Boys, routine Dick tests are done on every boy admitted and all boys with a positive reaction are treated with Streptococcus scarlet fever toxin prepared according to the Dick method. Five doses, consisting of 500, 2,000, 8,000, 25,000 and 80,000 skin test doses, are given hypodermically at weekly intervals. The accompanying table gives the incidence of positive reactions in 3,025 Dick tests. All the tests during the last nine years were done by Dr. G. F. Leonard of the Biological Laboratories of E. R. Squibb & Sons, which eliminates a possible source of error. An intradermal injection of 0.1 cc. of standard scarlet fever toxin, containing one skin test dose, was given in each case and a reaction of 1 cm. or more was considered positive.

Our percentage of positive cases (15.5) is rather low but understandable when one considers the strata of society from which our boys come. They have probably been immunized to most infections during earlier childhood. Our boys range in age from 8 to 17 years and are committed only from the state of New Jersey. Melnick,[1] in a study of the children in the St. John's Orphanage in Philadelphia, found an incidence of 17 per cent positive, while Bull,[2] in an analysis of his private patients, found an incidence of 83 per cent positive. The latter group was described as privileged children who have been sheltered from infection.

An analysis was made of a group of patients, all of whom were treated by me and who remained in the institution long enough to be retested after treatment. One hundred and seven boys comprise this group: Eighty-five were tested once from three to seventeen months after treatment was completed, while twenty-two were tested twice from sixteen to thirty months after treatment was completed. Two boys were found to have positive reactions ten and seventeen months respectively after treatment. This gives an incidence of success in 98.2 per cent. Both were given an additional course, and one became negative while the other left the institution before he was retested.

Incidence of Positive Dick Tests

Year	Total	Negative	Positive	Positive, per Cent
1925	589	444	125	21.9
1926	77	62	15	19.4
1927	312	275	37	11.9
1928	317	266	51	16.0
1929	306	260	46	15.0
1930	404	335	69	17.0
1931	302	259	43	14.2
1932	319	283	36	11.2
1933	419	371	48	11.4
Grand totals..	3,025	2,555	470	15.5

There have been some slight reactions to immunization, chiefly headache, fever, occasionally nausea and vomiting, and rarely rheumatic pains. Scarlatinal eruptions were not noted in any of our cases but peculiarly were noted in two boys following tetanus antitoxin given for prophylactic purposes. Of the 107 boys, 12 were admitted to the institution hospital, an incidence of 11.2 per cent. Seven boys were admitted once during the five weekly treatments, while four were admitted twice and one boy was admitted three times. It should be stated that boys are admitted to the hospital particularly because of elevation of temperature or for any reason that temporarily handicaps their academic or vocational training.

No precautionary measures were given to decrease the incidence of reactions because of their minor character. Melnick[1] outlined a precautionary procedure which the average practitioner might not care to use, because of its resemblance to a preoperative routine. During the past three years two cases of scarlet fever occurred in the institution. One was in a boy who had a positive Dick test and was awaiting treatment, while the other was in a nurse who had not been Dick tested.

CONCLUSIONS

1. Three thousand and twenty-five boys were Dick tested, with an incidence of 15.5 per cent positive reactions.
2. An analysis was made of 107 treated cases, with an incidence of success in 98.2 per cent.
3. Twelve boys (11.2 per cent) were admitted to the institution hospital because of reactions, chiefly elevation of temperature.
4. No case of scarlet fever developed in negative Dick cases or in treated positive cases. One case developed in an untreated positive.

1. Melnick, Theodore: Prevention of Scarlet Fever, Arch. Pediat. 50: 158 (March) 1933.
2. Bull, H. G.: Report on a Group of Fifty Children Dick Tested Eight Years After Immunization Against Scarlet Fever, J. A. M. A. 101: 363 (July 29) 1933.

Therapeutics

THE THERAPY OF THE COOK COUNTY HOSPITAL

EDITED BY BERNARD FANTUS, M.D.
CHICAGO

NOTE.—In their preparation, these articles are submitted to the members of the attending staff of the Cook County Hospital by the director of therapeutics, Dr. Bernard Fantus. The views expressed by various members are incorporated in the final draft prepared for publication. The series of articles will be continued from time to time in these columns.—ED.

THERAPY OF TETANUS

PROPHYLAXIS

1. *Medical, Surgical and Obstetric Asepsis.*—Tetanus has followed infection from hypodermic injection, especially of tissue-destroying drugs (such as quinine) and if made into the lower extremity. It has occurred also after vaccination. Infection may occur from blisters on the feet, from the umbilicus in the new-born infant, from bed sores contaminated by feces, and from burns. Wound discharges of patients with tetanus are infectious; hence care must be taken to prevent inoculation of others. Even though in actual practice such transmission is rare, patients with tetanus are best treated by a special nursing and medical group, trained to give constant and adequate care.

2. *Treatment of Contaminated Wounds.* — Under local or general anesthesia, as needed, the wound should be incised, if this is required, to remove all foreign bodies (dirt, clothing, bone denuded of periosteum). Cleansing with soap and water, should be followed by liberal use of solution of hydrogen dioxide. For wounds that cannot be rendered aseptic by cleansing and débridement, the Carrel-Dakin technic of wound disinfection is probably best. Cauterization should never be done, as necrotic tissue favors the growth of tetanus germs. The skin surrounding the wound should be painted with tincture of iodine to produce and maintain hyperemia.

3. *Antiserum.*—In all cases in which earth or street dirt has entered the tissues, one should inject 10 cc. (1,500 units) of antiserum subcutaneously near the wound as soon as possible (from 0.5 to 1 cc. first and wait three or four minutes for possible reactions before injecting the remainder of the dose). If there is a large, dirty, macerated wound, the minimum initial dose should be 5,000 units. A second dose should be given within ten days, as immunity lasts for only seven

to ten days. Children are given half of the adult's dose. Should a secondary operation become necessary, the prophylactic dose should be repeated, but care should be taken first to desensitize the patient to horse serum.

TREATMENT

1. *Antispasmodic.* — For patients admitted with spasms, securing of immediate and prompt relaxation is imperative. Tetanic spasms should be controlled and continuous sleep or at least complete muscular relaxation secured to avoid respiratory muscle spasms and exhausting convulsions.

(*a*) Chloral hydrate, from 1 to 2 Gm. every four hours (up to 10 Gm. daily), may be given, preferably in starch water by rectum, and the patient kept asleep until the symptoms have abated. Instead of this, amytal sodium may be used in doses of 0.2, 0.4 or 0.8 Gm. by mouth, by rectum or intravenously as required to keep the patient under moderate narcosis all the time.

(*b*) Morphine sulphate, 8 mg., may be given hypodermically every four hours as required to allay pain. While cyanosis is no contraindication to its use, it should be given with caution so as not to depress the respiratory center.

(*c*) In severe cases, with recurring convulsions, magnesium sulphate should be injected intrathecally under light chloroform anesthesia. The dose is 1 cc. of 25 per cent solution to each 10 Kg. of body weight; for children, 0.5 cc. for each 10 Kg. The patient should be kept in the horizontal position with the head slightly elevated to protect the respiratory center. The dose should not be pushed to complete relaxation but merely to the point of rest and comfort. The effect sets in within half an hour and lasts up to twenty-four hours, when the dose should be repeated (0.8 cc. of solution to each 10 Kg.). If respirations become slow or shallow, from 2 to 5 cc. of 5 per cent solution of calcium chloride should at once be injected intravenously and the spinal canal washed with physiologic solution of sodium chloride. If necessary, artificial respiration should be kept up for hours. If spinal puncture cannot be used, 25 per cent solution may be given subcutaneously (from 1 to 2 cc. to each 10 Kg. of weight), four times in twenty-four hours.

(*d*) The masseter muscles should be infiltrated with procaine hydrochloride (0.5 per cent solution) against trismus resisting other treatment.

2. *Antiserum.*—This must not be given until the spasms are under control. A preliminary skin test should be given. (*a*) Local infiltration of the tissue (muscles) should be done some distance away from the wound with 20,000 units of antiserum.

(*b*) Intravenous injection with 60,000 units of antiserum should be done at the same time as the local infiltration. It is best given diluted with Ringer's solution, and by the drop method.

One must be prepared to treat anaphylaxis (q. v.) with epinephrine.

(*c*) Intramuscular injection is the most important mode of administration. In milder cases (those with a long incubation period or with local symptoms only) it should be given instead of intravenous injection, and, in more severe cases, following the intravenous injection, 60,000 units daily for the first two days.

(*d*) Intrathecal injection is given only in severe cases with trismus, under very light chloroform anesthesia, and after permitting from 10 to 20 cc. of spinal fluid to escape, 15,000 units slowly (preferably by gravity), and repeated daily until the symptoms subside. It is well to dilute the serum in the syringe with some of the spinal fluid. Cistern injection is considered best in head injuries. The advantage of intrathecal injection is questioned.

(*e*) Endoneural injection may be considered in desperate cases. Its advantage has not been established.

3. *General Regimen.*—Continuous and special medical and nursing care is essential.

There is constant danger of tonic spasm of the respiratory muscles, even as late as the fourteenth to the twenty-first day, which may produce fatal asphyxia. These spasms are best detected by frequent gentle palpation of the abdomen and watching the respirations as soon as the abdomen becomes rigid. The occurrence of this rigidity indicates immediate administration of more sedative even if the patient is asleep.

(*a*) Absolute rest and quiet in a dark room are necessary—no talking, no switching on of lights, no slamming of doors. The patient should be given an adequate sedative before being disturbed for any treatment, such as an enema or catheterization.

(*b*) The diet should consist entirely of liquids, as solids may cause spasm of the muscles of deglutition. If swallowing is impossible, retention enemas of 5 per cent dextrose solution should be given. Milk may be fed by gavage; later, from a bulb or a nursing bottle with large holed nipple. Intravenous or intramuscular injections of 5 per cent dextrose solution must be used, in addition, to a sufficient extent to maintain an adequate fluid income.

(*c*) Frequent aspiration of the nasopharynx is required in patients unconscious from large doses of sedative.

(*d*) A laxative, such as liquid petrolatum or castor oil, is required, as constipation is the rule.

(*e*) Catheterization may be demanded. The bladder must be watched for distention in all cases.

(*f*) The patient should be kept as comfortable as possible, as discomfort causes restlessness and even convulsions and increases the amount of sedative medication required, and with this the danger from the sedative. Sponge baths may be demanded if the patient is hot and perspiring; mentholated calamine lotion and epinephrine injections, for serum reactions.

4. *Surgical Treatment.*—Here, opinion is divided. Some believe that operation is not indicated after the onset of the disease excepting in rare cases. Others consider acute tetanus a surgical emergency indicating, if possible, complete excision of the focus without entering infected tissue and, if this is not feasible, wide exploration under general anesthesia for débris and foreign bodies in all cases in which the severity of the disease increases while the patient is in the hospital. At any rate, no surgery should be undertaken until after sedative and antitoxin treatment has been established.

5. *Artificial Respiration.*—If enfeeblement of respirations and cyanosis manifest themselves, artificial respiration, preferably by means of a respirator, should be instituted. Asphyxia from spasm of the respiratory muscles should be prevented by adequate antispasmodic therapy; it is not amenable to the respirator. Patients kept alive for nine days have at least a 90 per cent chance of recovery.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

H. A. CARTER, Secretary.

EVEREADY PROFESSIONAL MODEL CARBON ARC LAMP REACCEPTED

In a report published in THE JOURNAL, Aug. 15, 1931, page 462, the Council accepted for a period of one year the Eveready Professional Model Carbon Arc Lamp, manufactured by the National Carbon Company, Inc., Cleveland. This lamp is designed for general radiation therapy in physicians' offices, hospitals or clinics.

The unit operates on 110-115 volts, 60 cycles, alternating circuit, and the current drawn from the line does not exceed 15 amperes. The carbons are brought into contact, separated and held at proper arc length when burning by means of a motor-operated constant current arc control. The feeding of the arc is entirely automatic and the feeding mechanism is started merely by turning on the switch. The carbons are drawn together and, when the arc strikes, they separate to the correct arc length. When the carbons have burned to the minimum permissible length, the arc is automatically extinguished. The transformer, mounted on the rugged stand, permits a current of 25 amperes to flow through the arc while but 15 amperes is drawn from the line.

The company claims that the unit will provide sufficient ultraviolet, visible and infra-red radiations to supply the demands of physicians practicing artificial radiation therapy. The claims in the advertising matter and descriptive literature examined by the Council conform with the Council's adopted statement "Regulations to Govern Advertising of Ultraviolet Generators to the Medical Profession." The Eveready Professional Model Carbon Arc Lamp, therefore, is reaccepted and included in the list of accepted devices for the regular period of three years.

VICTOR MODEL "B" THERMO-SPECTRAL LAMP ACCEPTABLE

The General Electric X-Ray Corporation manufactures a therapeutic radiant heat lamp called the Model "B" Thermo-Spectral Lamp. It is furnished with two types of radiant energy generators—a nitrogen-filled tungsten filament bulb and a resistance (infra-red) unit. The socket in the chromium plated reflector is standard and the resistance unit can be exchanged for the bulb or vice versa in accordance with technic employed by the physician.

Victor Model "B" Thermo-Spectral Lamp.

The stand is equipped with a flexible extension arm, which may be bent at any angle and retain the position given it. The arm is mounted on a sliding vertical rod, which may be adjusted for height, the over-all extension (approximately 7 feet) giving a wide range of adjustments. The shipping weight is 55 pounds.

The unit was investigated in a clinic acceptable to the Council. With the infra-red unit, the distance for comfort on the average skin was found to be 24 inches. At 18 inches the heat was intolerable. The Council believes that the lamp will render satisfactory service to a physician who desires to practice infra-red radiation therapy.

The firm gives the following values:

	Spectral Range, Angstrom Units	Dominant in Region of (Angstrom Units)	Wattage
Incandescent bulb ...	4,000- 25,000	9,000–11,000	500 watts
Infra-red unit	7,600–150,000	20,000–30,000	600 watts

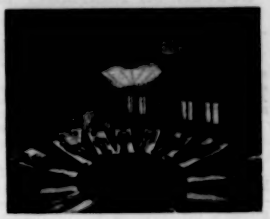
The Victor Model "B" Thermo-Spectral Lamp, therefore, is placed on the Council's list of accepted devices.

HANOVIA GROUP IRRADIATION LAMP ACCEPTABLE

The Hanovia Chemical and Manufacturing Company offers for sale to the profession the following four models of group irradiation lamps:

No. 2135. A four-burner unit for alternating current (60 or 25 cycles).
No. 2133. A two-burner unit for alternating current (60 or 25 cycles).
No. 2134. A four-burner unit for direct current, 220 volts.
No. 2132. A two-burner unit for direct current, 220 volts.

Aside from the number of burners, the construction of these lamps is practically the same. The burners themselves are similar in type to those used in the Super Alpine Sun Lamp, which has been accepted by the Council on Physical Therapy and reported on in THE JOURNAL, July 30, 1932, page 389. The burner consists of an evacuated tubular vessel constructed of transparent fused quartz containing mercury pools, which function as electrodes and supply mercury vapor for arc operation. The group irradiation unit itself is ordinarily mounted in the ceiling; hence a remote-controlled lighting arrangement is required. The burners are lighted by establishing a momentary contact between the enclosed mercury pools. This is accomplished, first, by tilting the burner in such a manner that the mercury flows from one end to the other; second, by restoring the burner to its normal level so that the mercury flows back to its original position. Lighting is accomplished in the alternating current lamp by a motor-operated tilting device and is controlled by the operator stationed at the control cabinet. Establishment of the arc automatically returns the burner to its proper position and stops the motor.



Hanovia Group Irradiation Lamp Acceptable

The physical and clinical claims in the descriptive literature and advertising matter for this unit conform with the Council's statement "Regulations to Govern Advertising of Ultraviolet Radiation Generators to the Medical Profession."

The Hanovia Group Irradiation Lamp, therefore, is included on the list of accepted devices for physical therapy.

EVEREADY SOLARIUM TYPE CARBON ARC LAMP REACCEPTED

In a report published in THE JOURNAL, Aug. 22, 1931, page 541, the Council accepted for one year the Eveready Solarium Type Carbon Arc Lamp, manufactured by the National Carbon Company, Inc., Cleveland. It is designed to administer therapeutic light treatment simultaneously to groups of patients.

The length of the lamp is approximately 3 feet and the width depends on the number of units included in each lamp. One, two or four units can be housed in a complete solarium lamp. Canopy, reflectors, exhaust fan and remote control cabinet are supplied with each unit. Suitable ammeters for measuring the current at each arc are supplied and placed in a convenient position on each control cabinet. Each unit is designed to accommodate two pairs of carbons. The arc burns between only one pair of carbons at a time. As these burn, the arc shifts to the other pair without interruption. The carbons are brought into contact, separated and held at proper arc distance by means of a motor-operated, constant current, arc control. The feeding of the arc is entirely automatic and the feeding mechanism is started merely by pushing a switch on the remote control cabinet. The carbons are drawn together and, when the arc strikes, they separate to the correct arc length. When the carbons have burned to the minimum permissible length, the arc is automatically extinguished. The firm claims that Eveready Carbons will operate the generator for ten hours without attention.

The standard therapeutic solarium unit is built for operation on 220 volt, 60 cycle alternating current, at 60 amperes arc current. The arc potential is approximately 50 volts and each arc requires an input of 3,100 watts at 20.5 amperes line current.

The claims made for this lamp in the advertising matter examined by the Council comply with the published statement "Regulations to Govern Advertising of Ultraviolet Generators to the Medical Profession." The Eveready Solarium Type Carbon Arc Lamp, therefore, is reaccepted and included in the accepted list of devices for physical therapy for the regular period of three years.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

NEO-SYNEPHRIN HYDROCHLORIDE.—laevo-α-hydroxy-β-methyl-amino-3-hydroxy ethylbenzene hydrochloride.—The hydrochloride of the laevo isomer of a synthetically prepared derivative of phenylethylamine having the formula $C_6H_3OH.CHOHCH_2NHCH_3.HCl$. Neo-synephrin hydrochloride differs from synephrin tartrate in that (1) neo-synephrin hydrochloride is a salt of hydrochloric acid—synephrin tartrate is a salt of tartaric acid; (2) neo-synephrin hydrochloride is a *laevo* compound—synephrin tartrate is a *dextro* compound; and (3) the hydroxyl of the nucleus in neo-synephrin hydrochloride is in the *meta* position—in synephrin tartrate it is in the *para* position.

Actions and Uses.—Neo-synephrin hydrochloride is a vasoconstrictor which is active when administered orally. It is more powerful in vasoconstrictive ability than synephrin tartrate, and possesses a relatively low toxicity. Applied to mucous membranes it causes contraction of the small blood vessels, thus reducing swelling and congestion of such membranes. Neo-synephrin hydrochloride may be useful in the symptomatic treatment of the nasal congestion accompanying disorders of the upper respiratory tract such as sinusitis, vasomotor rhinitis and hay fever. It may also be employed in combination with a local anesthetic, for surgical or dental use.

Dosage.—For topical application to the nasal mucous membrane the 0.25 per cent solution is ordinarily used. The 1 per cent solution, diluted with an equal volume of physiologic solution of sodium chloride or Ringer's solution, may be used when a stronger preparation is desired. For surgical and dental anesthesia, it may be diluted in the proportion of three to four drops of the 1 per cent solution to 10 cc. of a 2 per cent procaine hydrochloride solution. Neo-synephrin hydrochloride is relatively stable in alkaline solutions; it may be sterilized by boiling.

Manufactured by Frederick Stearns & Company, Detroit. U. S. patent 1,680,055 (Aug. 7, 1928; expires 1945). U. S. trademark 90,142.

Solution Neo-Synephrin Hydrochloride, 0.25 Per Cent: Neo-synephrin hydrochloride 0.25 per cent, sodium benzoate 0.1 per cent, and sodium chloride 0.8 per cent, in distilled water.

Solution Neo-Synephrin Hydrochloride, 1 Per Cent: Neo-synephrin hydrochloride 1 per cent, sodium benzoate 0.1 per cent, and sodium chloride 0.8 per cent, in distilled water.

Neo-synephrin hydrochloride occurs as white, odorless, nonhygroscopic crystals possessing a bitter taste. It is readily soluble in water and alcohol. The aqueous solution is neutral to litmus paper. It melts between 139-141 C. The specific rotation [α] 25/D ranges between —46.2 and —47.2.

Transfer 0.3 Gm. of neo-synephrin hydrochloride to a glass container, dissolve in 3 cc. of water, add 15 drops of ammonia water and rub the glass container with a glass rod: the base that separates when washed with cold water and dried melts at 170-171 C., without decomposition. Determine the nitrogen content of the base by the micro Dumas method: the nitrogen found is not less than 8.2 per cent nor more than 8.5 per cent. Dissolve 0.010 Gm. of neo-synephrin hydrochloride in 1 cc. of water and add 1 cc. of copper sulphate solution (10 per cent) followed by 1 cc. of sodium hydroxide solution (20 per cent): a reddish purple color forms that is not extracted by ether. Dissolve 0.01 Gm. of neo-synephrin hydrochloride in 1 cc. of water and add 1 drop of ferric chloride (10 per cent): a permanent amethyst purple color develops. Dissolve 0.02 Gm. of neo-synephrin hydrochloride in 3 cc. of alcoholic potassium hydroxide solution, add 3 drops of chloroform and boil: there is no odor of carbylamine *(absence of primary amines).* Dissolve 0.05 Gm. of neo-synephrin hydrochloride in 30-40 cc. of distilled water, add 1 cc. of diluted hydrochloric acid in 1 cc. of barium chloride solution: no turbidity should result *(absence of sulphate).* Dissolve 0.2 Gm. of neo-synephrin hydrochloride in 10 cc. of distilled water: the solution yields a negative test for heavy metals when tested according to the U. S. P. X method (see U. S. P. X, page 439). To 1 cc. of a solution containing 0.02 Gm. of neo-synephrin hydrochloride add 2 drops of a freshly prepared solution of sodium nitroprusside, 1 per cent, then 1 cc. of sodium hydroxide solution followed by 0.6 cc. (10 drops) of glacial acetic acid: the final solution should not be a deeper yellow than the same reagents, without the neo-synephrin hydrochloride *(absence of corresponding ketone).*

Dissolve about 0.2 Gm. of neo-synephrin hydrochloride, accurately weighed, in 200 cc. of water, heat to boiling, add 4 cc. of diluted nitric acid, followed by silver nitrate solution in slight excess; allow the container with mixture to stand for six hours, transfer to a Gooch crucible, wash well with diluted nitric acid (10 cc. of diluted nitric acid diluted to 100 cc.), dry at 100 C., cool in a desiccator and weigh: the chloride (Cl^-) calculated from the silver chloride weighed is not less than 17.20 per cent nor more than 17.60 per cent. Heat about 0.2 Gm. of neo-synephrin hydrochloride, accurately weighed, for twenty-four hours, in an oven at 100 C.: the loss is not more than 0.1 per cent. Determine the nitrogen content by the micro Dumas method: the nitrogen found is not less than 6.7 per cent nor more than 7.0 per cent. Transfer about 0.5 Gm. of neo-synephrin hydrochloride, accurately weighed, to a platinum dish; ignite until constant weight is attained: the ash is less than 0.1 per cent.

Neo-Synephrin Hydrochloride 1 Per Cent Solution.

Transfer 10 cc. of the solution to a beaker, evaporate the solution to dryness on a water bath, extract the residue with three 15 cc. portions of boiling absolute isopropyl alcohol, evaporate the isopropyl alcohol to dryness on a boiling water bath, dry the extract in an oven at 100 C. to constant weight: the residue is equal to not less than 0.95 per cent nor more than 1.05 per cent. The melting point ranges between 138 and 140 C.

Dissolve the residue in 3 cc. of water, add 10 drops of ammonia water, rub the glass container with a glass rod, filter the precipitate, wash with cold water on a porous plate: the melting point is 169-171 C.

Neo-Synephrin Hydrochloride ¼ Per Cent Solution.

Follow the standards as described for the 1 per cent solution except use a 25 cc. sample.

DILAUDID.—Dihydro-morphinone hydrochloride.—$C_{17}H_{19}O_3N.HCl$. Dilaudid differs essentially from morphine hydrochloride in that one of the hydroxyl groups of the latter has been replaced by a ketone group.

Actions and Uses.—Dilaudid is closely allied both chemically and pharmacologically to morphine, having the analgesic property of morphine as well as its action on the respiratory system. Its action on the intestine is probably less marked than is that of morphine. It is more toxic than morphine and is clinically effective in doses which are considerably smaller than are necessary with that alkaloid. It has been shown experimentally and clinically that dilaudid is powerfully analgesic and that, like morphine, it can depress the respiratory mechanism profoundly. At the same time, the experimentally established ratio between effective doses of morphine and dilaudid for the production of desirable effects is not materially different from the ratio between their toxic doses. Clinical trial has not shown that dilaudid is free from tolerance and addiction evoking properties, and, while side actions such as nausea, vomiting and constipation seem to occur less frequently than with morphine, the prolonged administration of dilaudid should be undertaken with as much caution as would be exercised with morphine itself. Dilaudid comes within the scope of the federal narcotic regulations.

Dosage.—As a sedative and for the relief of pain, the usual oral dose is 2.5 mg. (1/25 grain); in mild pain or cough, 1.3 mg. (1/48 grain) may be given orally. The customary hypodermic dose is 2 mg. (1/32 grain). Clinically the dose of dilaudid necessary to produce analgesia is about one-fifth that of morphine.

Manufactured by E. Bilhuber, Inc., Jersey City, N. J. (Bilhuber-Knoll Corporation, Jersey City, N. J., distributor). No U. S. patent. German patent 380,919 (1923). U. S. trademark 298,197.

Ampules Solution Dilaudid, 2 mg. (1/32 grain), 1.1 cc.: Each cubic centimeter contains dilaudid, 2 mg., in physiologic solution of sodium chloride.

Hypodermic Tablets Dilaudid, 2 mg. (1/32 grain).
Hypodermic Tablets Dilaudid, 3.2 mg. (1/20 grain).
Hypodermic Tablets Dilaudid, 4 mg. (1/16 grain).
Tablets Dilaudid, 2.5 mg. (1/24 grain).

Dilaudid occurs as a fine, white, crystalline, odorless powder; freely soluble in water, about 1 in 3; soluble in alcohol; insoluble in ether. Its aqueous solution is neutral to litmus. From aqueous solution, ammonia water and sodium hydroxide precipitate the free base, dihydromorphinone as fine, white crystals, soluble in an excess of sodium hydroxide.

Dissolve about 0.5 Gm. of dilaudid in 25 cc. of water, add sufficient ammonia water to make distinctly alkaline and let stand overnight; collect the precipitate of dihydromorphinone on a filter paper, wash with cold water, dry at 100 C.: it melts with decomposition at 257 to 262 C. To 10 cc. of the foregoing filtrate add an excess of diluted nitric acid and 2 cc. of silver nitrate solution: a curdy white precipitate results, soluble in an excess of ammonia water. Add 0.5 Gm. of dilaudid, previously dissolved in 2 cc. of water, to an aqueous solution containing 1 Gm. of hydroxylamine hydrochloride, warm, followed by the addition of an excess of ammonia water and set aside overnight; collect the precipitate of oxime on a filter paper, wash with a diluted ammonia water (1 part ammonia water with 99 parts of water) and water, dry at 100 C.: it melts with decomposition at 230 to 235 C.

Dissolve 0.02 Gm. of diiaudid in 5 cc. of sulphuric acid and add 1 drop of ferric chloride solution and heat gently: no blue coloration results. Dissolve 0.01 Gm. of dilaudid in 1 cc. of water and mix 10 cc. of a freshly prepared potassium ferricyanide solution to which previously has been added 0.1 cc. of ferric chloride solution: a blue color results (*difference from codeine*). Boil about 0.2 Gm. of dilaudid with 5 cc. of sodium hydroxide solution: the odor of ammonia is not noticeable (*ammonium salts*). Dissolve about 0.5 Gm. of dilaudid in 15 cc. of water; separate portions of 5 cc. each yield no red coloration on dilution with an equal volume of diluted hydrochloric acid and 0.2 cc. of ferric chloride solution (*meconate*); no turbidity with 1 cc. of diluted hydrochloric acid and 1 cc. of barium chloride solution (*sulphate*); no coloration or precipitation on saturation with hydrogen sulphide (*salts of heavy metals*).

Dry about 0.5 Gm. of dilaudid at 100 C. for six hours: the loss in weight does not exceed 1.5 per cent. Incinerate about 0.5 Gm. of dilaudid, accurately weighed: the residue is not more than 0.1 per cent. Transfer about 0.3 Gm. of dilaudid, accurately weighed, to a suitable Kjeldahl flask and determine the nitrogen content according to the official method described in Official and Tentative Methods of Analysis of the Association of Official Agricultural Chemists, third edition, page 20, chapter 2, paragraph 22: the percentage of nitrogen corresponds to not less than 4.25 per cent, nor more than 4.5 per cent when calculated to the dried substance. Transfer about 0.3 Gm. of dilaudid, accurately weighed, to a suitable beaker, add 100 cc. of water, followed by the addition of 25 cc. of silver nitrate solution and 10 cc. of nitric acid, boil with continuous stirring and allow to cool in a dark place. Collect the precipitate of silver chloride on a Gooch crucible, wash with a diluted nitric acid and water, followed by alcohol and ether; finally dry to constant weight at 100 C.: the amount of hydrogen chloride calculated from the silver chloride found corresponds to not less than 11.25 per cent, nor more than 11.5 per cent when calculated to the dried substance.

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING ADDITION TO THE RULES AND REGULATIONS.

RAYMOND HERTWIG, Secretary.

SPECIAL PURPOSE FOODS

"Special Purpose Foods" with usefulness restricted to specific purposes, such as inclusion in diets for obesity or morbid conditions, shall display on the labels and in the advertising, in easily legible type and in close proximity to the trade name, the designation "Special Purpose Food" and a statement listing all ingredients in the order of their decreasing proportions by weight in the food.

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

IRRADIATED VITAMIN D PASTEURIZED MILK

(1) CLOVER LEAF DAIRY COMPANY'S
(2) DETROIT CREAMERY COMPANY'S
(3) EBLING CREAMERY COMPANY'S
(4) H. P. HOOD & SONS, INC.
(5) THE MITCHELL DAIRY COMPANY, INC.
(6) OHIO CLOVER LEAF DAIRY COMPANY'S
(7) PRODUCERS MILK COMPANY'S
(8) QUALITY MILK PRODUCTS COMPANY'S SELECT
(9) QUALITY MILK PRODUCTS COMPANY'S JERSEY
(10) ROSZELL'S
(11) SIDNEY WANZER & SONS, INC.
(12) ST. LOUIS DAIRY COMPANY'S

Distributors.—(1) Clover Leaf Dairy Company, Gary, Ind.; (2) Detroit Creamery Company, Detroit; (3) Ebling Creamery Company, Detroit; (4) H. P. Hood & Sons, Inc., Boston; (5) The Mitchell Dairy Company, Inc., Bridgeport, Conn.; (6) Ohio Clover Leaf Dairy Company, Toledo, Ohio; (7) The Producers Milk Company, Cleveland; (8) and (9) Quality Milk Products Company, Tulsa, Okla.; (10) J. D. Roszell Company, Peoria, Ill.; (11) Sidney Wanzer & Sons, Inc., Chicago; (12) St. Louis Dairy Company, St. Louis.

Description.—Bottled pasteurized vitamin D milk irradiated with ultraviolet rays (patent No. 1,680,818).

Preparation.—The milk complies with legal requirements and is pasteurized by the standard holding method. For description of irradiation, see THE JOURNAL, Oct. 7, 1933, page 1155.

Vitamins.—Clinical investigation shows this milk to be a reliable antirachitic agent if proper amount is used. Contains 135 U. S. P. X (Revised, 1934) vitamin D units per quart.

Claims of Distributors.—Irradiated antirachitic pasteurized milk having otherwise the flavor and food values of usual pasteurized milk.

SAVOY STRAINED VEGETABLES FOR INFANTS BEETS, CARROTS, GREEN BEANS, PEAS, PRUNES FLAVORED WITH LEMON JUICE, SPINACH, AND STRAINED VEGETABLES WITH CEREAL AND BEEF BROTH

UNSEASONED

Distributor.—Steele-Wedeles Company, Chicago.

Packer.—The Larsen Company, Green Bay, Wis.

Description.—Respectively sieved beets, carrots, green beans, peas, prunes flavored with lemon juice, spinach and vegetables (carrots, potatoes, tomatoes, celery, peas, beans, spinach) with pearl barley and beef extract; prepared by efficient methods for retention in high degree of the natural mineral and vitamin values. No added sugar or salt. These products are the same as the respective accepted Larsen's vegetables and fruits (THE JOURNAL, July 8, 1933, p. 125; July 22, 1933, p. 282; July 29, 1933, p. 366; Aug. 12, 1933, p. 525; Aug. 19, 1933, p. 605; Aug. 26, 1933, p. 675).

SUNKIST CAKE FLOUR

BLEACHED

Distributor.—Maney Milling Co., Omaha.

Manufacturer.—Philip H. Postel Milling Co., Mascoutah, Ill.

Description.—Soft winter wheat short patent flour, bleached.

Manufacture.—Soft winter wheat is washed, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended and bleached with nitrogen trichloride (4 Gm. per barrel).

WINTER'S PURINA 100% WHOLE WHEAT BREAD

Manufacturer.—Southern California Baking Company, San Diego, Calif.

Description.—A whole wheat bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from whole wheat flour, water, sweetened condensed skim milk, invert sugar, lard, sucrose, yeast, salt, malt syrup, and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	37.7
Ash	0.8
Fat (ether extraction method)	2.0
Protein (N × 6.25)	10.1
Crude fiber	1.2
Carbohydrates other than crude fiber (by difference)	48.2

Calories.—2.5 per gram, 71 per ounce.

Claims of Manufacturer.—Conforms to the United States Department of Agriculture definition and standard for whole wheat bread.

ARMOUR'S STERILIZED UNSWEETENED EVAPORATED MILK

Manufacturer.—Armour and Company, Chicago.

Description.—Unsweetened, sterilized evaporated milk.

Manufacture.—The procedure of evaporation and canning, and the analysis are essentially the same as for the usual evaporated milk (THE JOURNAL, April 16, 1932, p. 1367).

Claims of Manufacturer.—See announcement on the advertising of the Evaporated Milk Association (THE JOURNAL, Dec. 19, 1931, p. 1890).

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 16, 1934

PLASMA MAGNESIUM

Until recently, consideration of the physiologic rôle of the mineral nutrients tended to be overshadowed by an enthusiastic interest in certain organic factors potent in nutrition; namely, the vitamins. There is a rapidly growing tendency at present, however, to consider the possible relations of inorganic elements to the bodily functions. Surprisingly enough, this trend has been directed into the field of the nutritional significance of some mineral elements that occur as traces in the organism.[1] Thus, fluorine, aluminum, zinc, copper and manganese have been added to a list that has long included iron and iodine. One might assume from all this that the part played by the more familiar constituents, notably calcium, magnesium, sodium, potassium, chlorine and phosphorus, was now adequately understood.

This is certainly not the case for some of these elements. The significance of magnesium, for example, has remained vague indeed, despite the fact that its occurrence in notable amounts in both the blood and the body tissues has long been recognized. Most textbooks of biochemistry present at best a vague story of magnesium in the body. One writer,[2] who may be selected as representative, records that magnesium occurs in small amounts in all animal and plant cells. In vertebrates the body's chief store is in bone. Bone contains but one-eighth as much magnesium as calcium; muscle and nerve tissues, on the other hand, contain twice as much. The blood content is 3 mg. per hundred cubic centimeters. Magnesium deficiencies do not occur on the average diet. Human milk contains little, indicating, he concludes, that but little is required, even by the growing organism.

Salts of magnesium have perhaps been better understood as pharmacologic agents. The use of magnesium sulphate (epsom salt) and of magnesium citrate as laxatives has a long and respectable tradition. Considerable investigation has been devoted in the past to the explanation of the laxative effects. Soluble magnesium compounds have also become known, particularly through the studies of the late S. J. Meltzer, as substances that can induce narcosis when they are introduced in adequate doses parenterally into the body. How important magnesium may be in the routine of the physiologic processes has been made clear by McCollum and his co-workers [3] at Johns Hopkins University. When experimental animals are restricted to a diet containing less than two parts per million of magnesium, they fail to grow and quickly become abnormal. Within three days all exposed skin areas show vasodilatation, which becomes intensified until about the tenth day. During this time the animals are nervous and easily startled, and by the end of the period (eleventh day) they may be so unstable as to go into convulsions in response to any disturbance, with fatal results in 80 per cent of the cases. There is loss of hair on the ears, jaws and neck, and the salivary and tear glands are hyperactive. After two or three weeks of magnesium deprivation, the teeth are affected and later the tissues around the teeth. Finally there is decalcification of the entire skeleton.

This is of course an extreme illustration, but it presents the possibility that cases showing convulsions or other conditions of increased neuromuscular activity would be encountered clinically in which the plasma magnesium is low. According to studies of Hirschfelder [4] of the University of Minnesota, both hypomagnesemia and hypermagnesemia are clinical entities. The normal or average concentration of magnesium in the blood in health is about 2 mg. per hundred cubic centimeters of the plasma, ranging from 1.8 to 2.5 mg. When healthy persons take epsom salt by mouth they excrete about 40 per cent of the ingested magnesium in the urine in twenty-four hours; but the concentration of magnesium in the blood plasma does not rise appreciably. However, when the kidneys are injured, administration of one or more purgative doses of epsom salt may lead to hypermagnesemia with its expected consequences. At a level of 11 mg. of magnesium per hundred cubic centimeters, plasma drowsiness is likely to occur; a content of 17 mg. was attended by coma.

Hirschfelder believes, from his clinical observations and blood chemistry studies, that many cases of coma in nephritic patients, diagnosed uremic coma, may be simply magnesium coma induced by epsom salt purgation. He remarks that since a single ordinary dose of epsom salt by mouth can raise the concentration of magnesium in the blood of nephritic patients to two thirds of the concentration at which coma sets in, and since with larger doses it is easy to induce coma in

1. An interesting review of this subject is given by Rose, Mary S.: The Nutritional Significance of Some Mineral Elements Occurring as Traces in the Animal Body, Yale J. Biol. & Med., Mendel Anniversary Number 4:499 (March) 1932.

2. Cameron, A. T.: A Textbook of Biochemistry, New York, Macmillan Company, 1933.

3. Kruse, H. D.; Orent, E. R., and McCollum, E. V.: J. Biol. Chem. 96:519 (May) 1932; 100:603 (May) 1933. Orent, E. R.; Kruse, H. D., and McCollum, E. V.: Am. J. Physiol. 101:434 (Aug.) 1932. Kruse, H. D.; Schmidt, Marguerite M., and McCollum, E. V., ibid. 106:635 (Sept.) 1933.

4. Hirschfelder, A. D.: Clinical Manifestations of High and Low Plasma Magnesium, J. A. M. A. 102:1138 (April 7) 1934.

nephritic animals, it seems probable that a few repeated doses of epsom salt would induce coma in the patients. It is therefore most probable that there are every year in the United States many cases of coma occurring in nephritic patients which are diagnosed uremic coma but which in reality are magnesium coma caused by the use of epsom salt as a purgative. Since experimental animals could be brought out of this coma instantly and their lives prolonged by the intravenous injection of calcium chloride, the intravenous injection of calcium chloride would probably restore such patients to consciousness. The story of epsom salt probably applies comparably to magnesium citrate. Hirschfelder has also described a clinical syndrome associated with low plasma magnesium accompanied by a condition of hyperirritability of the neuromuscular system, often associated with muscular twitchings or convulsions. These cases are probably more common than has been realized. At least in the patient whose kidneys are pathologic the twitchings or convulsions can be relieved by the administration of a purgative dose of epsom salt by mouth. Apparently new chapters in the history of magnesium in the body are being written.

THE FUEL FOR STRENUOUS EXERCISE

The problem of the source of energy in vigorous muscular work has become increasingly complicated as new methods of investigation have been applied. The fuel of exercise may be investigated by analyses of the inspired and expired air during and after work. Information may also be obtained by studies of the change in composition of the blood and urine produced by the exercise. These studies have shown that sugars are the principal but not the only fuel used. There is no depletion of sugar as a result of short periods of strenuous exercise,[1] and no good effects can be expected from its administration. The fact that sugar is used in large amounts during muscular exercise does not indicate that the carbohydrate should be increased in the diet of athletes. The body is able to form sufficient sugar from any adequate diet except during prolonged violent exertion. In the latter case the carbohydrate reserve may be reduced to low levels.

The available observations on the blood sugar levels in exercise seem to be extremely contradictory. A partial explanation, at least, has been found in the degree to which excitement or emotional factors enter into the situation. During severe exercise in the laboratory, little variation is ordinarily observed. This steadiness is not equally true on the football field. Edwards, Richards and Dill[2] of the Fatigue Laboratory at Harvard University have observed that hyperglycemia is uncommon in exercise with little or no emotional stress but common in exercise with emotional stress on the football field. In football players it is not much influenced by age within the range of 16 to 22 years, by diet, or by the mass of spectators. Before the game begins blood sugar is normal, and it appears to reach a peak when the game is half over. At the end of the game blood sugar may be normal while urine sugar is high, indicating that blood sugar has passed through a maximum. Inferentially, if exercise should continue (as in marathon races) hypoglycemia might result.

In the latest observations by Edwards, Margaria and Dill[3] there is no evidence that carbohydrate is essential for strenuous exercise or that it is more essential in work than in rest. A study was made of exercise of sufficient duration and intensity to reduce the carbohydrate reserve to low levels. Altering the rate of work each half hour alters the proportion of energy derived from carbohydrate but not the blood sugar. With a plethora of carbohydrate some fat is used in exercise and, as carbohydrate reserve diminishes, the proportion of energy derived from fat may increase from 8 per cent to 77 per cent in actual cases. The Harvard physiologists believe that, while the choice of fuel is determined with precision, blood sugar concentration is not the governor. Thus, when dextrose is ingested during work and after depletion of carbohydrate reserves, the blood sugar may reach a maximum before there is a response of the respiratory quotient. It has often been assumed that the principal cause of fatigue is carbohydrate depletion. According to the Harvard investigations in man the accumulation of acetone bodies in exercise of long duration without food may be a primary source of breakdown.

MATERNAL MORTALITY

The United States Children's Bureau of the Department of Labor, with the assistance of an obstetric advisory committee, has presented an analytic report[1] of maternal deaths that occurred in thirteen states in 1927 and in the same states and two others in 1928. The states contributing the material for the study are fairly well distributed geographically and are typical of the sections in which they are located. In these fifteen states during the years of the study the deaths of 7,537 women were assigned to puerperal causes by the United States Bureau of Census. This number constituted 26 per cent of the deaths from puerperal sepsis in the entire birth registration area for these two years. In this study, 18 per cent of the deaths were of Negro women, with a rate nearly twice that for white women. The maternal mortality rate was 64 per 10,000 live births, as compared with a rate of 67 per 10,000 in the birth registration area for these two years. Of the total number studied it was found as

1. Best, C. H., and Taylor, N. B.: The Human Body and Its Functions, New York, Henry Holt & Co., 1932.
2. Edwards, H. T.; Richards, T. K., and Dill, D. B.: Blood Sugar, Urine Sugar and Urine Protein in Exercise, Am. J. Physiol. 98:352 (Sept.) 1931.
3. Edwards, H. T.; Margaria, R., and Dill, D. B.: Metabolic Rate, Blood Sugar and the Utilization of Carbohydrate, Am. J. Physiol. 108:203 (April) 1934.
1. Maternal Mortality in Fifteen States, Children's Bureau, Department of Labor, Bureau Publication 223. Maternal Deaths, Children's Bureau, Department of Labor, Bureau Publication 221 (abstract of complete report).

a result of interviews that 7,380 deaths had been actually puerperal in the meaning of the international classification; the detailed analyses are therefore based on these figures.

Nine per cent of all the deaths were of women who had had no medical care or care only when dying. Of the women included in the study, more than half were hospitalized some time during their final illness. The deaths of 4,066 occurred in hospitals, but the deliveries or abortions of only 2,629 occurred in hospitals. Relatively few of these patients who died in hospitals had planned hospitalization. About one third of the women died before they reached the last trimester of pregnancy. For more than half the women who died in hospitals after reaching the last trimester, hospitalization was an emergency measure. Of these women, 83 per cent were attended by physicians, interns or medical students, 11 per cent by midwives and 4 per cent by nonmedical attendants; 2 per cent of the women had no attendant at the delivery or at death if the patient died undelivered. Puerperal septicemia was the most important cause of death prior to the seventh month and accounted for 59 per cent of the deaths in this period. The deaths of 509 unmarried women were included in the study. Approximately one half of the deaths in this group as compared with 39 per cent of the deaths of married women were from puerperal septicemia. The maternal mortality rate in the states included in the study (except one) was 143 per 10,000 illegitimate live births and 60 per 10,000 legitimate live births.

An attempt was made to estimate the quality of prenatal care by grading this care in three groups. Of the 1,478 women who first consulted the physician before or during the fifth month of pregnancy, 49 per cent received grade I care, 16 per cent grade II care and 34 per cent grade III care.

More than half of the women had had some operative procedure before death. In 26 per cent of the deaths following forceps deliveries and 19 per cent of the deaths following versions the fatal outcome was assigned to sepsis. Seven per cent of the deaths included in the study followed cesarean section. The advisory committee comments on this fact as follows: "The fact that cesarean section was done on one fourth of all the women who died following operation for delivery suggests that there had been unwise selection of cases for the operation—as cesarean sections constitute only a small percentage of all operative deliveries in general."

Abortion as used in this study may be defined as the termination of a previable uterine pregnancy. Puerperal septicemia was the cause of the deaths of 73 per cent of the 1,825 women who died following abortions. These deaths constituted 45 per cent of the total number of deaths from puerperal septicemia in this study. Puerperal septicemia accounted for 40 per cent of the 7,380 deaths included in the study. Thirty per cent of all the deaths were preceded by some presumably toxic condition as the chief cause or chief contributory cause. The great majority of toxemic deaths were of women who lacked some or all of the ordinary safeguards.

As a result of these studies, which should be read in full by all those dealing with any aspect of pregnancy, the advisory committee made certain recommendations to the medical profession and the public. Physicians should assume leadership in maternal care, should obtain more accurate information relative to the cause and prevention of maternal deaths, and should evolve methods for acquiring better and more up-to-date knowledge of the fundamentals of obstetric care. Widespread education of the public as to the importance of securing and dangers of not securing adequate obstetric care also is recommended.

Current Comment

FACTORS INFLUENCING THE DEXTROSE TOLERANCE TEST

The dextrose tolerance test is of importance in diagnosis and investigation, yet the results obtained are frequently of little significance because of inadequate control of various factors. Studies in this field have made increasingly evident the fact that carbohydrate tolerance tests on the same individual, conducted at different times, may yield widely divergent results. An interesting analysis of some of the causes of these variations has been reported by Malmros[1] from the clinic of internal medicine at the University of Lund, Sweden. This investigator has studied the effect of previous diet, of age, and of renal threshold on the results obtained from dextrose tolerance tests on nondiabetic patients in the university clinic. The observations with respect to previous diet are of particular interest, since they involve the relation of acidosis to carbohydrate tolerance, a relationship recently considered in these columns.[2] Malmros reports that a low carbohydrate diet preceding a dextrose tolerance test produced an acidosis in most cases studied, and these persons exhibited a decreased carbohydrate tolerance. However, the acidosis is apparently not the sole factor responsible for this result. Although ingestion of ammonium chloride did produce a considerable acidosis and a somewhat diminished tolerance to dextrose, in harmony with observations of other investigators,[2] Malmros observed that a hypersensitiveness to carbohydrate could be shown also in instances in which no acidosis was present or in which the acidosis due to previous low carbohydrate ingestion was compensated by the administration of sodium bicarbonate. In fact, the carbohydrate tolerance after the ingestion of 20 Gm. of ammonium chloride daily for four days appeared to be better than that observed following a period of restricted carbohydrate intake. This interesting hyper-

1. Malmros, Haqvin: Acta med. Scandinav., supp. xxvii, 1928.
2. Acid-Base Balance and Carbohydrate Tolerance, editorial, J. A. M. A. 102:620 (Feb. 24) 1934.

sensitiveness to carbohydrate, after a regimen poor in carbohydrate and protein and rich in fat, appeared in patients as early as one day after the diet had been begun and was fully pronounced after three days; it remained for a short time after the subject was returned to an ordinary mixed diet. On the other hand, previous high carbohydrate feeding did not affect the dextrose tolerance test. These results are of considerable interest from a practical point of view. It appears that a dextrose tolerance determination following a low carbohydrate diet may yield a blood sugar curve resembling perfectly a diabetes curve in the absence of this disease. Not infrequently, persons in whom glycosuria has been demonstrated have been given limited amounts of carbohydrate; a subsequent tolerance test might readily result in a wrong diagnosis and unpleasant consequences for the patient.

Association News

MEDICAL BROADCASTS

Columbia Broadcasting System

The American Medical Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45, Central daylight saving time. The next three broadcasts will be as follows:

June 21. Mischievous Misconceptions, W. W. Bauer, M.D.
June 28. Motor Touring and Camping, W. W. Bauer, M.D.
July 5. Death Angel, W. W. Bauer, M.D.

National Broadcasting Company

The National Broadcasting Company talks have been discontinued for the summer.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Plague Infected Squirrels.—Seven plague-infected ground squirrels were found in Tulare County, near Fountain Springs, May 9, according to *Public Health Reports.*

Society News.—Dr. Frederick G. Novy, among others, addressed the Alameda County Medical Association, May 21 on "Lymphogranuloma Inguinale."——Dr. Noel F. Shambaugh, Long Beach, addressed the San Diego County Medical Society, June 12, on "Degenerative Liver Diseases."

Outbreak of Acute Anterior Poliomyelitis.—The California State Department of Public Health recently reported a steadily mounting incidence of acute anterior poliomyelitis. Statistics on the incidence of this disease during January, February, March, April, and the first four weeks of May of 1934 shows that 269 cases were reported. Analysis of the age groupings in the group of cases reported in May indicates that approximately 83 per cent of the patients are under the age of 15 years (from 1 to 4 years, 28 per cent; from 5 to 9 years, 38 per cent; from 10 to 14 years, 17 per cent); but the impression is had also that cases reported during the fifth week involve the older age groups. As is well known, this disease manifests itself ordinarily in the late summer and fall, and increased incidence in the early summer is generally accepted as an epidemiologic indication that the disease will reach epidemic proportions. It is interesting to note that about 70 per cent of the cases were reported from the counties of southern California, including Riverside, Orange, San Bernardino, San Diego and Los Angeles. If the same sequence of events should occur in 1934 as did in 1930, the disease will undoubtedly spread throughout California. Under such conditions, it is necessary that physicians scrutinize with "a high index of suspicion" any illness, particularly of the respiratory or digestive tracts, in individuals from the infected areas especially, for the probable incidental paralysis may not occur in many cases.

CONNECTICUT

State Laboratories Move.—The bureau of laboratories of the Connecticut State Health Department, Hartford, moved from 247 Pearl Street, June 10, to new quarters in the Atlas Building.

State Medical Election.—Dr. Walter R. Steiner, Hartford, was elected president of the Connecticut State Medical Society at its annual meeting, May 24, and Dr. Charles W. Comfort Jr., New Haven, was reelected secretary. The next annual session will be held in New Haven, May 22-23, 1935. In addition to various clinics, the scientific program consisted of the following:

Spondylolisthesis, Dr. Robert G. Reynolds, Hartford.
Concerning Certain Contacts Between Law and Medicine, Dr. Daniel P. Griffin, Bridgeport.
Treatment of Chronic Endocervicitis, Dr. Edward J. Tracey, Norwalk.
Lobar Pneumonia in Children: A Survey of Eighty-Six Cases, Dr. Clifton C. Taylor, Bridgeport.
Cancer of the Breast, Dr. Douglas Quick, New York.
Hyperparathyroidism, Dr. Wilder Tileston, New Haven.
Medical Aspects of the State Farm for Women, Dr. Rose Howe Jameson, Niantic.
Use of Small Quantities of Radium in Malignancy of the Mouth, Uterus and Breast, Dr. George T. Pack, New York.
Maternal Mortality in Connecticut, Dr. Louis F. Middlebrook Jr., Hartford.

Dr. Pack also conducted a symposium on cancer of the uterus. Dr. Eugene M. Blake, New Haven, opened a round table discussion on the diagnosis and treatment of paralytic squint; Dr. Dorland Smith, Bridgeport, one on treatment of chronic tear sac infections, and Dr. William T. Morrissey, New Britain, one on treatment of chronic ear infections. The Fairfield County Medical Association acted as host.

DISTRICT OF COLUMBIA

Medical Bills in Congress.—H. R. 9836, introduced (by request) by Representative Lewis, Maryland, proposes to provide for the licensing of operators in beauty shops in the District of Columbia. The bill would apparently authorize cosmetologists to use electrical apparatus or appliances to remove superfluous hair, warts, or moles. S. 3479 has passed the Senate, proposing to amend the act regulating the practice of the healing art in the District of Columbia (1) by substituting the corporation counsel of the District of Columbia for the United States district attorney as a member of the Commission on Licensure to Practice the Healing Art, and (2) by transferring to the corporation counsel for the District of Columbia, from the United States district attorney, the duty of instigating legal proceedings for the enforcement of the act.

FLORIDA

Society News.—Dr. Nathaniel L. Spengler, Tampa, addressed the De Sota-Hardee-Highlands Counties Medical Society in Arcadia, April 10, on "Hyperthyroidism in Infants and Children."——Speakers before the quarterly meeting of the Leon-Gadsden-Liberty-Wakulla-Jefferson County Medical Society in Chattahoochee, April 19, included Drs. Robert B. McIver, Jacksonville, on "Surgical Notes on the Urinary Tract in Children," and William O. Martin Jr., Atlanta, "Management of Squint."——At a meeting of the Marion County Medical Society, April 12, Drs. Gerry R. Holden and Edward Jelks, Jacksonville, spoke on "The Physician's Responsibility in the Cancer Problem" and "Diagnosis of Malignant Conditions of the Intestinal Tract."

IDAHO

Society News.—Dr. Edward L. Whitney, Walla Walla, Wash., discussed hypertension before the Nez Perce County Medical Society in Lewiston, March 21, and Dr. Carl J. Johannesson, Walla Walla, gave an illustrated address on "Cholecystography Correlated by Gastro-Intestinal X-Ray Examinations, Checked Against Surgical Findings."

Annual Registration Due July 1.—All practitioners of medicine and surgery holding licenses to practice in Idaho are required by law to register annually on July 1, with the department of law enforcement, and at that time to pay a fee of $2. If a licentiate has not paid the annual registration fee by October 1, his license can be cancelled and will be restored within five years thereafter on payment of the delinquent

fees and a $10 penalty. If a license has been canceled for more than five years, it can be reinstated only on the payment of $25 and on the licentiate's passing an examination, the nature of which shall be determined by the department of law enforcement.

ILLINOIS

Society News.—Dr. William H. Olmsted, St. Louis, addressed a joint meeting of the Belleville and East St. Louis Medical Society and the St. Clair County Medical Society, June 7, on "Insulin Reaction in Treatment of Diabetes."

Chicago

Dr. Slaymaker Honored.—Dr. Samuel R. Slaymaker, president of the Washington Boulevard Hospital and clinical professor of medicine, Rush Medical College, was guest of honor at a dinner given by 100 friends and colleagues at the University Club, June 7, in recognition of his twenty years' service with the hospital. An oil portrait of the guest of honor was presented to the hospital, and Dr. Slaymaker was presented with a watch and chain. Dr. Vincent J. O'Conor was toastmaster. Among the speakers were Dr. Arthur R. Metz and Dr. James B. Herrick. Photographs of the portrait were given to each one in attendance.

Ricketts Prize Awarded.—The Division of Medical Sciences of the University of Chicago announces the award of the Howard Taylor Ricketts Prize for 1934 to Dr. Paul E. Steiner and Thomas C. Grubb, Ph.D. Dr. Steiner was given recognition for his work on "The Rôle of the Avian Tubercle Bacillus in the Etiology of Hodgkin's Disease" and Dr. Grubb for his work on "Studies on the Coccus Forms of Corynebacterium Diphtheriæ." The first award of this prize was made in 1913 to Dr. Esmond R. Long and the late Dr. George L. Kite. The announcement of the 1934 award was made on May 3, the anniversary of Dr. Rickett's death, which occurred while he was conducting research on typhus fever in Mexico.

Personal.—Dr. and Mrs. Luther G. Bass observed their golden wedding anniversary, April 22.——Dr. Grace Hiller, instructor in medicine in the Division of Medical Sciences, University of Chicago, has been appointed director of the student health service at Goucher College in Baltimore, effective in the autumn.——An illuminated parchment award of merit was presented to Matthew O. Foley, editorial director of *Hospital Management*, by the trustees of the American Hospital Association. Dr. Bert W. Caldwell, executive secretary of the association, made the presentation, and speakers included Lewis Bernays, British consul; Dr. Malcolm L. Harris; Dr. Thomas Hugh Scott, Hines, Ill., and Mr. Asa S. Bacon, superintendent, Presbyterian Hospital. Mr. Paul H. Fesler, superintendent, Wesley Memorial Hospital, was toastmaster.

INDIANA

Society News.—Dr. Robert B. Osgood, Boston, addressed the Terre Haute Academy of Medicine, the Fifth District Medical Society, the Vigo County Medical Society and the Aesculapian Society in Terre Haute, May 4, on "General Aspects of Arthritis and Its Treatment."——The Eleventh Indiana Councilor District Medical Association was addressed, May 16, in Kokomo, among others, by Dr. Donald P. Abbott, Chicago, on "So-Called Indigestions—The Early Diagnosis of Gastro-Intestinal Disorders and Their Treatment," and Arthur L. Harter, D.D.S., Kokomo, "Dental and Medical Relationship."

Graduate Course.—The Indiana University School of Medicine conducted a graduate course, May 21-June 2. Included on the program were Drs. Dean Lewis, professor of surgery, and Joseph C. Bloodgood, adjunct professor of surgery, Johns Hopkins University School of Medicine, Baltimore; Udo J. Wile, professor of dermatology and syphilology, University of Michigan Medical School, Ann Arbor, and Lester Dragstedt, Chicago. In addition to discussions of preventive medicine, early diagnosis and treatment of cancer, and eradication and prevention of venereal diseases, a study of modern health problems as they relate to the professor of medicine as a whole was presented. A feature of the annual course was the alumni home-coming day and banquet, with addresses, among others, by Drs. Byrl R. Kirklin, class of 1914, head of the department of roentgenology of the Mayo Clinic, and Dr. William T. Green, class of 1925, in orthopedic surgery, Harvard University Medical School, Boston. Their subjects were, respectively, "Lesions of the Gastro-Intestinal Tract" and "Infections and Inflammations of the Bone."

IOWA

Summer Round Up.—The summer round up of preschool children conducted each year by the Des Moines Council of Parent-Teacher Associations with the cooperation of local physicians has been assured. A special effort is being made to include in the free clinics only those children whose parents are unable to pay for the service.

Dr. Thompson Honored.—The Madison County Medical Society held a dinner for Dr. William H. Thompson, Winterset, April 9, in recognition of his completion of fifty years in the practice of medicine. Dr. Thompson was made an honorary member of the society. Dr. Channing G. Smith, Granger, was toastmaster. Among those present were Drs. Walter L. Bierring, Des Moines, now President, American Medical Association, and Dr. John H. Peck, former president of the National Tuberculosis Association.

MAINE

Medical Library.—The Portland Medical Club recently established a medical reference library in the Portland Public Library, the nucleus of which was begun with voluntary contributions of members.

Typhoid Outbreak.—Sixty-five cases and five deaths were reported in a recent outbreak of typhoid in Augusta. The disease was first diagnosed in a boy who had been ill for about ten days without medical attention, the father caring for him and also helping to milk the cows on the dairy farm. The milk was distributed to thirty-seven families and two grocery stores. Nurses and a physician were provided by the state department of health and more than 7,000 people were given antityphoid treatment at free clinics; an additional 1,500 persons were treated by private practitioners. All food handlers in the city, including milk dealers, were examined to locate possible carriers.

MARYLAND

Dohme Lectures.—Donald D. Van Slyke, Ph.D., of the Rockefeller Institute for Medical Research, New York, delivered the Charles E. Dohme Memorial Lectures for 1934 at Johns Hopkins University School of Medicine, April 26-28. The lectures were entitled "Physiology of the Amino Acids" and "Factors Controlling Urea Excretion."

Dr. Welch's Will Provides Endowment Fund.—The needs of the Institute of History of Medicine and the Welch Medical Library will be given preference in the establishment of an endowment fund at Johns Hopkins University under the will of the late Dr. William H. Welch. After providing for the payment of several specific bequests, Dr. Welch left the residue of his estate in four parts, one of which is to establish the endowment fund for any purposes approved by the trustees, the institute and library to be given the preference. The university was also bequeathed all the physician's medical, scientific and literary books, pamphlets, papers, medals and medical portraits, for the use of the medical school, including the Institute of the History of Medicine and the School of Hygiene and Public Health. Dr. Welch had been identified with Johns Hopkins University School of Medicine since 1884.

Society News.—Dr. George E. Bennett, Baltimore, gave an illustrated lecture before the Maryland Academy of Medicine and Surgery, April 17, on "Treatment of Fractures of the Neck of the Femur." Dr. Arthur G. Barrett was installed as president of the society at this meeting, having been reelected to this position for the eighteenth time.——Dr. Hans Zinsser, Boston, addressed the Baltimore City Medical Society at its semiannual meeting, April 6, on "Variations of Typhus Fever."——Anna M. Baetjer, Sc.D., among others, addressed the seventh meeting of the Society of Hygiene of Johns Hopkins University, April 11, on "Relation of Potassium to the Contractions of the Mammalian Skeletal Muscle and Its Similarity to the Effect of Sympathetic Stimulation."——The Maryland Academy of Medicine and Surgery was addressed in Baltimore, May 15, by Dr. Nathan B. Herman, among others, on "Diagnosis and Treatment of Hay Fever as Encountered in Maryland"; Dr. Lewis B. Hill, "Emotional Problems Expressed in Physical Symptoms," and Robert H. Brotman, D.D.S., "Dental Facts for the Physician."

MASSACHUSETTS

Departments Merged.—The departments of botany, zoology and general physiology of the Biological Laboratories of Harvard University, Boston, have been consolidated to form a department of biology. Alfred C. Redfield, Ph.D., professor of physiology, has been appointed to the newly created position of director of the laboratories.

Society News.—Dr. Edward W. Archibald, Montreal, addressed the semiannual meeting of the New England Medical Society in Boston, May 31, on "Etiology and Treatment of Recurring Subacute Pancreatitis."——"Chronic Invalidism due to Joint Pathology" was discussed before the Massachusetts Society of Examining Physicians, May 23, by Drs. Joel E. Goldthwait, Howard K. Thompson and Carl L. Watson.——The Hampden District Medical Society was addressed, April 24, by Dr. Abraham Myerson, Boston, on "The Neuroses as the General Practitioner Meets Them." Dr. Archibald J. Douglas, Westfield, was elected president of the society.

Expedition to Study Onchocerciasis.—The continuation of investigations carried on by Dr. Richard P. Strong in Guatemala on the control and elimination of onchocerciasis, and the development of scientific and medical knowledge of the Katanga region, are the objects of a six-months expedition which sailed, April 25, for Africa under the auspices of the department of tropical medicine. The members include:

Dr. Richard P. Strong, director.
Joseph C. Bequaert, Ph.D., entomologist.
Jack H. Sandground, Sc.D., helminthologist.
Mr. Henry E. Mallinckrodt, laboratory assistant photographer.
Mr. R. Stuyvesant Pierrepont Jr., zoological assistant.
Mr. Byron L. Bennett, technician.

MICHIGAN

Society News.—Dr. Walter G. Maddock, Ann Arbor, spoke before the Berrien and Cass County medical societies at Dowagiac, May 16, on "General Care of Peripheral Vascular Diseases."——The Houghton County Medical Society was addressed in Calumet, May 1, by Drs. Alfred C. LaBine, Houghton, and George M. Waldie, Hancock, on "Thoracic Surgery in Tuberculosis."——Reuben L. Kahn, D.Sc., director of laboratories, University Hospitals, Ann Arbor, addressed the Oakland County Medical Society in Pontiac, May 16, on "Immunological Considerations in Connection with Vaccine Therapy." Dr. Carl E. Badgley, Ann Arbor, addressed the society, April 18, on lesions of the upper extremity.——Dr. Robert C. Jamieson, Detroit, was chosen president-elect of the Wayne County Medical Society at its annual session, May 21. Dr. William J. Cassidy was installed as president. Alexander G. Ruthven, president, University of Michigan, Ann Arbor, spoke, among others, on "Modern Trends in Professional Education."

Physicians Honored.—The regular alumni banquet of the Detroit College of Medicine and Surgery, now the Wayne University College of Medicine, June 7, served as a testimonial dinner to Drs. Andrew P. Biddle, Don M. Campbell and Angus McLean "three of the oldest and most useful graduates of the school." Dr. James W. Inches was toastmaster. Dr. Biddle, who has been professor emeritus of dermatology and syphilology at his alma mater since 1917, first became associated with the school in 1892. In addition to serving as secretary and counsellor to the state medical society, Dr. Biddle was president for two successive terms, from 1916 to 1918. Dr. Campbell has been a member of the school's faculty for forty years, many of which have been as professor and head of the department of ophthalmology. He was president of the Wayne County Medical Society from 1914 to 1915. Dr. McLean was affiliated with his alma mater from 1905 to 1913 as professor of clinical surgery. However, he has been more active in positions with the state and city governments; he served as city physician from 1888 to 1892; quarantine inspector for the Port of Detroit, 1893, became a member of the state board of health in 1905, and, in 1911, a member of the Detroit Board of Health. He is a past president of the Wayne County Medical Society and of the Michigan State Medical Society.

MISSISSIPPI

State Medical Election.—Dr. James R. Hill, Corinth, was chosen president-elect of the Mississippi State Medical Association at its annual meeting in Natchez, May 10, and Dr. Edward C. Parker, Gulfport, was installed as president. Vice presidents are Drs. Altus B. Harvey, Tylertown; Gilruth Darrington, Yazoo City, and Richard C. Smith, Drew. Biloxi was designated as the place for the next annual meeting, May 14-16, 1935.

Medical School to Be Remodeled.—An appropriation of $75,000 by the state legislature makes possible the renovation of the old medical building of the University of Mississippi School of Medicine and also the remodeling of two floors of one of the wings of the University Hospital for the departments of physiology, pathology and bacteriology. It will also provide new equipment. It is reported that the entrance requirements will be raised from two to three years of college work and that the courses in physical diagnosis and clinical microscopy will be made adequate to meet the requirements of the four year schools.

MISSOURI

Tuberculosis Day.—Tuberculosis Day, the annual celebration of the Tuberculosis and Health Society, will be observed in St. Louis, June 26. A National League baseball game will be played at Sportsman's Park, following the entertainment.

Society News.—Speakers before the St. Louis Medical Society, June 5, were Drs. Bransford Lewis and Major G. Seelig on "Vocations and Avocations for the Doctor" and "History and Significance of Quackery in Medicine," respectively. The society devoted its meeting, May 29, to the memory of members who had died since June, 1932.

NEW JERSEY

Personal.—Eugene Maier, Ph.D., formerly of the staff of the Rockefeller Institute for Medical Research and of the department of pathology, Bellevue Hospital, New York, has been appointed chief bacteriologist of the Merck Institute for Therapeutic Research, Rahway.——Dr. Frank Overton, Patchogue, N. Y., has been appointed editor of the *New Jersey Medical Journal.*

State Medical Election.—Dr. Marcus W. Newcomb, Browns Mills, was chosen president-elect of the Medical Society of New Jersey at its annual meeting in Atlantic City, June 6. Dr. Lancelot Ely, Somerville, was installed as president. Vice presidents are Drs. Francis R. Haussling, Newark, and Spencer T. Snedecor, Hackensack. Dr. John Bennett Morrison, Newark, is secretary, and Dr. Elias J. Marsh, Paterson, treasurer.

NEW YORK

Osteopaths Barred from Practicing Surgery.—A bill designed to permit osteopaths to practice surgery with certain limitations was vetoed, May 23, by Governor Lehman. According to the New York *Times*, the governor said:

> This bill eliminates the present requirement of the Education Law that an osteopath shall not perform surgery with the use of instruments and adds a number of provisions which seem to authorize osteopaths to engage in every form of medical practice except the giving of drugs by mouth to cure disease and the performance of certain specified surgical operations.

It was further stated that, because of the ambiguous wording of the bill, it would be impossible to restrict and prevent any type of medical practice other than some types of major surgery.

Health at Schenectady.—Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended June 2, indicate that the highest mortality rate (24.8) appears for Schenectady and for the group of cities as a whole, 11.2. The mortality rate for Schenectady for the corresponding week last year was 8.6, and for the group of cities, 10. The annual rate for eighty-six cities for the twenty-two weeks of 1934 was 12.3 as against a rate of 11.7 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

New York City

Golden Anniversary Dinner.—Eight physicians who have held membership in the Medical Society of the County of Kings for fifty years or more were guests of honor at a dinner given by the society at the Hotel St. George, May 24. They were Drs. William Browning, Frank E. West, John C. MacEvitt, Lewis S. Pilcher, Elias H. Bartley, Charles P. Gildersleeve, William Moitrier and John A. Cochran. Dr. Dean Lewis, Baltimore, President, American Medical Association, was guest speaker. The Medical Society of Kings County is 112 years old.

Memorial Hospital Fifty Years Old.—A dinner celebrating the fiftieth anniversary of Memorial Hospital for the Treatment of Cancer and Allied Diseases was held, May 25, at the Waldorf-Astoria. Speakers were Dr. James Ewing, chairman of the medical board; Dr. Edward C. Dodds, director, the Courtauld Institute, Middlesex Hospital, London, England; Dr. Livingston Farrand, president of Cornell University; Mrs. Robert G. Mead, chairman of the finance committee, New York City Cancer Committee, and Dr. George H. Bigelow, superintendent of Massachusetts General Hospital and former

health commissioner of Massachusetts, Boston. At a special scientific meeting, May 24, at the New York Academy of Medicine, Dr. John A. Hartwell spoke on "The Place of a Cancer Institute in Medical Organization"; Dr. Robert B. Greenough, Boston, on "Organization of Cancer Service in General Hospitals"; Clarence C. Little, Sc.D., Bar Harbor, Maine, "Heredity in Cancer," and Dr. Dodds, "Cancerigenic Agents."

Society News.—Dr. Fred Wise addressed the American Stomatological Association, May 15, on "Buccal and Labial Lesions of Interest to Dentist and General Practitioner."——Dr. Henry A. Rafsky addressed the Medical Society of the County of Queens, April 20, on diagnosis and treatment of gallbladder disease. Dr. Abraham M. Rabiner spoke, May 4, on sciatica. Dr. Augustus L. Harris addressed the society, May 29, on vroscopy, and Dr. George L. Brodhead, maternal mortality.——Dr. John H. Morris addressed the New York Surgical Society, May 9, on "Cholesterosis of the Gallbladder."——Dr. Marie Pichel Levinson addressed the North Bronx Medical Society, April 5, on "Dangers of Gold Stem Pessaries."——Dr. George W. Holmes, Boston, addressed the New York Roentgen Society, May 21, on "Roentgen Diagnosis of Obscure Lesions in the Upper Gastro-Intestinal Tract."——Dr. Leila Charlton Knox, among others, addressed the New York Pathological Society, May 24, on "Synoviomata: Report of Three Cases."

NORTH CAROLINA

State Medical Election.—Dr. Paul P. McCain, Sanatorium, was installed as president of the Medical Society of North Carolina at its annual meeting, May 2. Dr. Paul H. Ringer, Asheville, was chosen president-elect and Dr. Lewis B. McBrayer, Southern Pines, reelected secretary. The next annual session will be held at Pinehurst, May 6-8, 1935.

New Health Department.—The commissioners have approved the establishment of a full-time health department for Bertie County, effective July 1. Dr. Frank H. Garriss, Lewiston, has been named county health officer. The county discontinued its health department four years ago. The new unit will be financed in part by the state board of health.

OHIO

Society News.—Dr. Henry B. Freiberg, Cincinnati, spoke on "Prostatic Resection" before the Clinton County Medical Society in Wilmington, May 1.——At a meeting of the Warren County Medical Society at Lebanon, May 1, Dr. Leo S. Friedman, Cincinnati, discussed communicable diseases.——Speakers before the Greene County Medical Society, May 3, were Drs. Jerome Hartman and Herbert L. Brumbaugh, Dayton, on osteomyelitis and orthopedic causes of pain in the back, respectively.——Dr. Arthur O. Peters, health commissioner of Dayton, discussed the "New Set Up in Medicine from a Public Health Standpoint" before the Montgomery County Medical Society, May 18.——At a meeting of the Logan County Medical Society, Dr. Clarence A. Mills, Cincinnati, spoke on "Climate and Weather as Health Factors."——Speakers before the Wood County Medical Society, April 19, were Drs. Bernhard Steinberg and J. Lester Kobacher, Toledo, on "Pathology of the Heart, Lungs and Kidneys as Concerns the General Practitioner" and "Modern Clinical and Laboratory Features of Cardiac Diagnosis," respectively.——Dr. Hugh G. Beatty, Columbus, considered "Sinus Infection in Children and Its Relation to Lower Respiratory Infections" before the Ashland County Medical Society, May 11.——A special meeting of the Portage County Medical Society in Ravenna, May 3, was addressed by Dr. Louis J. Karnosh, Cleveland, on "Insanities of the World's Great Geniuses."——Dr. Arthur S. Jones, Huntington, W. Va., discussed "Peripheral Nerve Injuries" before the Washington County Medical Society at Marietta, May 9.——At a meeting of the Hempstead Academy of Medicine, May 14, Dr. George M. Curtis, Columbus, discussed "The Significance of Iodine in the Management of Toxic Goiter."

PENNSYLVANIA

Alumni Day Clinics.—The University of Pittsburgh School of Medicine held its first annual day of clinics for the alumni, and their guests, June 2. At a luncheon following the clinics Dr. Ralph H. Boots, New York, gave an address on arthritis.

Cancer Meeting.—A public meeting on cancer constituted the meeting of the Cambria and Somerset County medical societies in Johnstown, May 10. Speakers were Drs. Joseph C. Bloodgood, Baltimore; Bernard P. Widmann, Philadelphia, and Samuel J. Waterworth, Clearfield.

Society News.—The annual meeting of the Sixth Councilor District of the Medical Society of the State of Pennsylvania was held at State College, May 24. In addition to reports, the program included addresses by Drs. John O. Bower, Philadelphia, on "The Physician's Duty to the Public in the Appendicitis Campaign" and Harold A. Miller, Pittsburgh, "Present and Future Medical Relief in Pennsylvania." Dr. Samuel P. Glover, Altoona, was the guest of honor at luncheon in recognition of his completion of fifty years of practice.——Dr. Joseph A. Hepp, Pittsburgh, addressed the McKeesport Academy of Medicine, May 28, on gynecologic endocrinology.

Philadelphia

Fund to Study Convulsions.—The Viola J. Lowe Memorial Research Fund has been established at the Temple University School of Medicine, it was announced, May 20, by Samuel E. Lowe, president of the Whitman Publishing Company, Racine, Wis. The fund will finance the study of convulsions occurring in epilepsy and other diseases having convulsive manifestations. The work will be conducted under the direction of Drs. Temple S. Fay, Frank W. Konzelmann and Omer William Wheeler.

University News.—The Leffmann Biological Assay Research Laboratory at the Philadelphia College of Pharmacy and Science, named in honor of the late Dr. Henry Leffmann, was dedicated, May 11. Dr. Leffmann was at one time professor of general chemistry, toxicology and hygiene at the Woman's Medical College of Philadelphia, professor of clinical chemistry and hygiene, Graduate School of Medicine of the University of Pennsylvania and lecturer on research at the college of pharmacy. He died in 1930.——Surg. Gen. Hugh S. Cumming, U. S. Public Health Service, Washington, D. C., gave the commencement address of Woman's Medical College of Pennsylvania, June 6.

Portrait of Dr. Babcock.—A portrait of Dr. William Wayne Babcock, for thirty-one years professor of surgery at Temple University Medical School, was presented to the school, May 2, by the classes of 1933 and 1934. Dr. George W. Crile, Cleveland, delivered the principal address. Tributes were paid to Dr. Babcock by Drs. Herbert L. Northrop, Edward J. Klopp and Thomas A. Shallow. Dr. Donald W. Ingham, Lancaster, president of the class of 1933, and John William Crosson, president of the class of 1934, made the presentation and Charles E. Beury, LL.D., accepted the portrait on behalf of the university. Dr. Babcock is at present president of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons.

VIRGINIA

Society News.—At a meeting of the University of Virginia Medical Society, May 7, Dr. Eugene M. K. Geiling, Baltimore, talked on recent studies of the function of the posterior lobe hormone.

Graduate Clinic at University Hospital.—The thirteenth graduate clinic at the University of Virginia Hospital, University, in cooperation with the department of clinical education of the Medical Society of Virginia, was held May 17-18. Subjects of clinics were emergency treatment of fractures, tumors and problem children. Addresses were made by Drs. Kenneth F. Maxcy, on public health phases of communicable diseases; William W. Waddell Jr., treatment of communicable diseases; Oscar Swineford Jr., management of hay fever, and James C. Flippin, the physician and advances in medicine.

WASHINGTON

Society News.—Physicians of Okanogan County recently organized a county medical society at a meeting in Omak, with Dr. James Fred Mills, Omak, as president and Dr. Lorenzo S. Dewey, Omak, secretary.——Dr. John F. Lecocq, Seattle, addressed the Kitsap County Medical Society, Bremerton, April 10, on fractures of the leg.——Dr. Howard L. Hull, Elma, addressed the Pierce County Medical Society, Lakeview, April 10, on "The Mantoux Test and Its Interpretation."——Dr. John F. Beatty, Everett, addressed the Snohomish County Medical Society, Everett, April 3, on heart failure.——Dr. Richard F. Berg, Portland, was the speaker before the Spokane County Medical Society, Spokane, April 12, on "Injuries to the Knee Joint."——Drs. Donald V. Trueblood and Brien T. King, Seattle, discussed neoplastic diseases and hyperparathyroidism, respectively, before the Whatcom County Medical Society, Bellingham, April 2.——At a meeting of the Yakima County Medical Society, Yakima, April 9, Drs. Lester J. Palmer and Maurice F. Dwyer, Seattle, delivered addresses on "Liver Functions in Glucose Metabolism" and "Roentgen-

ology of the Chest," respectively.——Dr. Park Weed Willis, Seattle, addressed the King County Medical Society, May 7, on "The Doctor on the Witness Stand."——Drs. Homer J. Davidson and Charles Homer Wheelon, Seattle, addressed the Chelan County Medical Society, April 13, on "Treatment of Mucous Colitis" and "Low Blood Sugar," respectively.

GENERAL

Study of Congenitally Malformed Children.—The Gynecean Hospital Institute of Gynecologic Research of the University of Pennsylvania, Philadelphia, is conducting an intensive study of families into which congenitally malformed children have been born. Special interest centers in families in which malformations have appeared in two or more children. The objectives of the study are to determine the nature of recurrence in the same family; to study the nature of the defects and to possibly throw light on their etiology. Physicians who have knowledge of any such families are urged to communicate with Dr. Douglas P. Murphy at the institute.

Prize for Essay on Industrial Medicine.—The sixth International Congress on Industrial Accidents and Diseases announces a prize of 1,000 Swiss francs to the author of the best (unpublished) original work on the subject "The Importance of Previous Physical Condition in Estimating the Sequelae of an Industrial Accident." Physicians in all countries are invited to take part. Manuscripts must be in hand by December 31. The award will be made during the next congress, to be held in Brussels in July 1935. Those interested should communicate with Dr. Fred H. Albee, 57 West Fifty-Seventh Street, New York, or Dr. Emery R. Hayhurst, Ohio State Health Department, Columbus.

Regulations for Practice in Switzerland.—Recent changes in regulations governing entrance to examination for the practice of medicine in Switzerland have restricted eligibility to Swiss citizens, the U. S. Treasury Department has been informed. However, a treaty may be made with any state that admits Swiss physicians to practice within its borders. The federal council also reserves the right to authorize taking of the examinations in "extraordinary cases" and "in consideration of particular circumstances." Foreign medical students who at the time the decree was promulgated were registered in a Swiss university, on the basis of a school graduation certificate conferring the right to admission to the examinations for the practice of medicine, are exempt from these changes.

Medical Study Trip to Hungary.—American physicians of good standing are invited to join a study trip to Hungary, which is being arranged by a committee of New York physicians at the invitation of the Hungarian Medical Postgraduate Committee of Budapest. The party will sail from New York August 18, visiting Munich and Oberammergau en route. The return trip may be made optionally via Berlin, Paris or Italy, arriving in New York September 30. Dr. Harlow Brooks is chairman of the committee and Dr. Richard Kovacs, secretary. Other members are Drs. Charles G. Kerley, Jerome M. Lynch, Wendell C. Phillips and Ervin Torok, all of New York. Dr. Emile de Grosz is president of the Hungarian Medical Postgraduate Committee of Budapest.

Health Projects in C W A Program.—A total of 75,763 men were employed in health projects during the existence of the Civil Works Administration. The estimated total cost was $12,242,886. In the improvement of sanitary conditions in rural communities, 32,010 men were employed at a cost of about $5,000,000. Malaria control, consisting of the elimination of mosquito breeding places, occupied 29,779 men at an estimated cost of $4,500,000. Similarly typhus fever control was pursued with 7,033 men at a cost of $1,143,636. The U. S. Public Health Service directed most of these services, the last in cooperation with the Bureau of Biological Survey, and in addition directed the work of sealing abandoned coal mines to prevent chemical reactions, which have been making treatment of drinking water difficult. The Bureau of Entomology also employed 369 men in spotted fever control work, which consisted of clearing and burning undergrowth in areas where ticks are abundant. The cost of this project was $79,500.

Medical Bills in Congress.—*Changes in Status:* S. 1286 has passed the Senate, providing that for the purposes of promotion, longevity pay and retirement there shall be credited to officers of the Veterinary Corps, and former officers of the Veterinary Corps now on the retired list, all full-time service rendered by them as veterinarians in the Quartermaster Department, Cavalry, or Field Artillery. S. 527 has passed the Senate, directing the Secretary of the Treasury to pay to Lillian Morden the sum of $2,462.20, in full settlement of all claims against the Government for medical expenses incurred as a result of contracting influenza while employed as a student nurse in the Medical Department of the Army at Fort Dodge, Des Moines, Iowa, and providing that Lillian Morden shall be admitted to such army hospital as may be directed by the Surgeon General of the United States Army for necessary care and treatment. S. 2892 has passed the Senate, amending existing laws prohibiting the introduction of intoxicating liquors within the Indian country to permit their use as medicine by practicing physicians for patients of Indian blood. H. R. 3768 has passed the Senate, changing the name of the retail liquor dealers' stamp tax in the case of retail drug stores or pharmacies to "medicinal spirits stamp tax." S. 2800, the Copeland food and drug bill, has been reprinted to include various amendments submitted by Senator Copeland, on behalf of the Senate Committee on Commerce, June 8.

ALASKA

Personal.—Dr. Walter W. Council, Juneau, has been appointed secretary-treasurer of the Alaska Board of Medical Examiners. He is also territorial commissioner of health.

Government Services

Health of the Army

The general death rate in the United States Army during 1933 was 4.1 per thousand of strength, as computed from weekly reports to the surgeon general. The rate for 1932 was 4.2 and for 1931 it was 4.5 The admission rate was 612 per thousand, as compared with 668 for 1932. The rate would have been still lower, the report points out, had it not been for an epidemic of respiratory diseases which carried over from the latter part of 1932 into January 1933. The total respiratory group accounted for an admission rate of 148 per thousand, as compared with 205 for 1932. Venereal diseases caused an admission rate of 30, a new low point. In the Civilian Conservation Corps, which was in existence for thirty-nine of the fifty-two weeks of 1933, the admission rate for diseases and injuries was 1.98 per thousand. There were 425 deaths during the period, a rate of 2.5. Respiratory diseases caused a rate of 248. During the year there were fifty-four cases of typhoid, twenty-eight in one company at Hamilton, Texas. Twenty-eight cases of meningitis occurred. Some of the rarer causes of admission to sick report were: tetanus, 1; tick fever, 1; undulant fever, 1; encephalitis, 3; poliomyelitis, 11, and smallpox, 4.

Death of Former Chief of Biological Survey

Edward William Nelson, who was chief of the Bureau of Biological Survey of the U. S. Department of Agriculture from 1916 to 1927, died of heart disease in Washington, May 19, aged 79. Since his retirement as chief he had been engaged in research. He held the honorary degrees of M.A. from Yale University and Sc.D. from George Washington University, both conferred in 1920. His published work includes monographs on mammals and birds and descriptions of many new species.

Applications of Interns in U. S. Public Health Service

The U. S. Public Health Service will consider applications to fill a number of vacancies which exist at the present time and also vacancies which will occur about July 1, for second year medical interns. Any young physicians, not over 30 years of age, who have graduated from class "A" medical colleges and who have completed, or will shortly complete, one year's internship in approved hospitals are eligible to apply. The public health service desires to secure applications only from candidates who are interested in the service as a career and who desire to request permission to appear before a board of commissioned officers for examination for appointment as assistant surgeons in the regular commissioned corps, on or about the time they will complete a year's service as interns in the public health service. Applicants who are selected will be offered appointments with quarters, subsistence and laundry and $86.50 per month until June 30, when the cash pay will be increased to $93.25, net, per month. Those interested in making application should address inquiries to the Surgeon General, U. S. Public Health Service, Washington, D. C., and more complete information and the necessary blanks on which to make application will be furnished.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 19, 1934.

A Further Increase of Road Accidents

A serious increase of road accidents during the first three months of this year, compared with the corresponding period of last year, is reported. In Great Britain, excluding London, there was an increase of 13.75 per cent in the number of persons killed and 12.5 in those injured. In Scotland there was an increase of 56.5 per cent in the number killed and 10.75 in those injured. A rise in the number of deaths in Glasgow from 24 to 45 and in Edinburgh from 9 to 22 mainly accounted for the increased percentage in Scotland. In Wales the increase in the number killed was 33 per cent. Commenting on these figures, Lieut.-Col. Jocelyn Pickard, secretary of the National Safety First Association (formed to prevent road accidents), said that there were 105,000 more automobiles on the road than last year, which might partially account for the increase of accidents. In London there was an increase in the number of accidents but a slight decrease in the number of deaths. The injured in the first three months of this year numbered 12,263, against 11,078 in the same period of last year. The total number of accidents was 32,138 and 27,009, respectively.

The Minimum Food Requirements

The controversy aroused by the publication of two somewhat divergent reports on minimum dietetic requirements was reported in THE JOURNAL, February 10, page 469. The main difference was that the committee of the Ministry of Health estimated 3,000 calories and 37 Gm. of first class protein as the daily requirements of a man doing moderate physical work, while the corresponding figures of the committee of the British Medical Association were 3,400 calories and 50 Gm. of protein. The committee of the British Medical Association set out "to determine the minimum weekly expenditure on foodstuffs which must be incurred by families of varying size if health and working capacity are to be maintained, and to construct specimen diets." The fact that the ministry accepted the advice of its own committee became the grounds for a political attack on the government, charging that the physicians of the British Medical Association had been flouted in a matter on which the lives of 2,000,000 unemployed persons depended. The difference has been investigated by a conference, which included Sir F. G. Hopkins, Professor Cathcart and Professor Mellanby representing the ministry's committee and Professor Cowell, Professor Mottram and Dr. G. P. Crowden representing the committee of the British Medical Association. The difference was found to be more a matter of misinterpretation than of actual fact. The ministry's committee was a permanent body appointed to advise on the practical application of modern advances in the knowledge of nutrition. It consisted of workers with a special knowledge of nutrition who did not possess authority to act or advise in economic matters. Their recommendation regarding requirements of calories and protein was intended to serve as a rough guide to health officers and to assist them in placing on a proper basis the nutrition of the communities and institutions under their charge. The values, being statistical averages, were meant to apply to whole communities and not to individuals or single families. On the other hand, the committee of the British Medical Association was not a permanent body but a special one assembled for a specific purpose. Its task was partly financial, and it had to decide on the food allowances necessary to maintain health and working capacity. It had to bear in mind that the unemployed spent much time in working on allotments, going to labor exchanges, or keeping themselves in good condition by exercising daily at training centers. They therefore recommended the 3,400 calories and 50 Gm. of first class protein per "man-equivalent."

The conference emphasizes the fact that there does not exist a standard of food requirements that can be rigidly applied in the same manner to all men and suggests that a sliding scale of caloric requirements is needed. It recommends the following:

Requirements per Day

Individuals	Calories Gross
Man: heavy work	3,400-4,000
Man: moderate work	3,000-3,400
Man: light work	2,600-3,000
Woman: active work	2,800-3,000
Woman: housewife	2,600-2,800
Boy: 14-18	3,000-3,400
Girl: 14-18	2,800-3,000
Child: 12-14	2,800-3,000
Child: 10-12	2,300-2,800
Child: 8-10	2,000-2,300
Child: 6-8	1,700-2,000
Child: 3-6	1,400-1,700
Child: 2-3	1,100-1,400
Child: 1-2	900-1,100

The conference also agreed that the average requirements of the entire population or of large mixed groups of people is about 3,000 calories a day, but for individual requirements the sliding scale should be consulted.

PROTEINS AND VITAMINS

Accumulated evidence indicated that the total daily requirement of protein per man probably lay between 80 and 100 Gm. The amount depended on physique, occupation, habits, personal taste and age, while climate appeared to be a factor of some importance. There was general agreement that a certain proportion of the total protein should be in the form of first class protein, i. e., of animal origin, such as milk, eggs, cheese, meat and fish. However, the desirable proportion of animal to total protein has never been determined. Growing children and expectant and nursing mothers required relatively large amounts of first class protein, much more than would be arrived at by simple calculation based on man-value equivalents. All recent studies had shown that for children milk was a most valuable food. It was, indeed, the only known naturally balanced food containing not only first class protein (18.7 Gm. to the pint) in readily available form but also minerals, vitamins, carbohydrate and fat. The conference therefore stressed the importance of this highly nutritious food for children and nursing and expectant mothers.

Fatal Accidents to Children

Fatal accidents to children were discussed at the congress of the National Safety First Association, held in London. Colonel Oakes said that the total number of accidents in 1932 was 3,718, of which 2,938 were in boys and 1,320 in girls—roughly, three boys to every two girls. Nearly 1,500 children were killed on the roads. More than one fifth, approximately 800, of the total casualties involved children under the age of 1 year. One third of the casualties, 1,200, or approximately 45 per cent, occurred during the next four years from burns and scalds, and 34 per cent in road accidents. Thus, more than 2,000, more than half the children killed in accidents, were under 5 years of age. More than 1,000 fatalities occurred in the next five years, and more than two thirds of these were on the roads. Only one sixth—namely, 600—occurred in the later school ages, from 10 to 14 years, and more than 50 per cent were on the roads. Eight times as many boys as girls were drowned. Twice as many girls as boys were victims of burns, whereas the number of boys who died from scalds was approximately twice as great as the number of girls.

With reference to the road accidents to children occurring in England and Wales, more than 900 out of 1,150 were to

pedestrians, 200 to pedal cyclists, and approximately 50 to passengers in vehicles. The number of pedestrian victims reached a maximum at the ages of 4 to 5 years. During the later school years the child became a relatively safe walker and at 15 was perhaps an example to many seniors. But at the same age he (not she) was nearing his worst record as a safe pedal cyclist. The research of the association showed 16 as the most dangerous age for pedal cyclists, 15 coming next. The great majority of casualties were in boys.

The Undiminished Maternal Mortality

At a dinner held in support of the Safer Motherhood Campaign, Mrs. Stanley Baldwin, the wife of the statesman, who led a campaign to provide anesthesia for poor women in labor, presided. Sir Hilton Young, minister of health, said that recent investigation had shown that a large proportion of the deaths in childbirth were due to preventable causes. He therefore welcomed the assistance of voluntary organizations. Two lines of advance were possible: one was the education of the expectant mother in antenatal care, the other the development of those services which rendered assistance to the expectant mother. At present the government provided maternity benefit (a payment of $7 to the wives under the national insurance act). There was a clear case for the development of those services provided by the local authorities on behalf of the mother and child, particularly in the supply and organization of midwives and arrangements for the services of consultants. He proposes to issue a circular on the subject to local authorities, pointing out the direction in which the development of their services was still required, particularly in those areas where the maternal mortality is highest. The condition that causes concern is the unsatisfactory fact that, while general mortality and infantile mortality have greatly declined in recent years, maternal mortality remains undiminished.

PARIS

(From Our Regular Correspondent)

April 25, 1934.

Treatment of Undulant Fever

Professor Lemierre of the Faculté de médecine de Paris delivered a lecture on the treatment of undulant fever, which appears to be getting more prevalent. He prefers injections of microbic endoproteins derived from cultures of Alcaligines abortus, which Reilly was the first to employ. Extraction of the endoproteins is done by the Besredka method. Three-day cultures on gelose are scraped, dried in vacuo and ground with 40 per cent of sodium chloride. An emulsion in distilled water is prepared in such a manner that 1 cc. of fluid corresponds to 0.02 Gm. of the dried culture. After being centrifugated, or set aside for twenty-four hours in the icebox, the supernatant fluid is collected, put in ampules and then sterilized. This preparation has a high antigenic value. It contains the endoproteins of 500 billion germs per cubic centimeter. In 1926, Courtois-Suffit, Garnier and Liège applied this treatment successfully, although at the price of a severe reaction that kept the temperature at 40 C. for three days. Lemierre regards this treatment as the most effective available for combating undulant fever but he emphasizes that antigen therapy acts exclusively on persons in a state of allergy as previously determined by a positive Burnet cutaneous reaction. If the test is negative, it is useless to employ this method. If a state of allergy is lacking, it can sometimes be created by repeating patiently the Burnet cutaneous test. Not until then can one apply antigen therapy, which is always remarkably effective, but less so when there are secondary, articular, osseous or pulmonary localizations. In the cases of Alcaligenes melitensis the method has given precisely the same results. The treatment should be regulated in the following manner: First one applies the Burnet test by injecting into the skin 0.2 cc. of an extract of Alcaligenes melitensis or of Alcaligenes abortus and one reads the result at the end of from eighteen to twenty-four hours. When positive, the diameter of the reddened and infiltrated area will vary from the diameter of a lentil to that of the palm of the hand. The dose of endoprotein that is then injected by the intramuscular route, or preferably by the subcutaneous route, to avoid local pain will range between 0.33 cc. and 1.5 cc., the smaller doses being reserved for cases in which the skin reaction is strongest. From one and one-half to two hours later, a severe chill commonly develops, together with a temperature of 39, 40 or even 41 C. (from 102.2 to 105.8 F.). After from twenty-four to forty-eight hours, the temperature falls suddenly to about 36.5 C. (97.7 F.); often if, during the next few days, a new Burnet skin test is applied, it will then be found negative. In the presence of the very strong Burnet skin reaction, great caution must be taken to save the patient a serious shock. The minimal dose of endoprotein injected in such cases may be without effect. A second dose may be given two days later, the quantity of inoculated endoprotein being increased. Sometimes even a third dose must be given. In the cases in which the sensitivity of the organism is very marked, successive injections of gradually increased doses appear to be preferable. It is too early to speak of cures in these cases. In undulant fever, new waves of fever may develop after prolonged periods of apyrexia. Nevertheless, great improvement immediately follows the violent shock reaction, the amelioration being manifest in the temperature and in the general condition of the patient.

Radiographers Required to Be Doctors

A new law pertaining to the practice of medicine will require the possession of a doctor's diploma in order to practice radiography and radiotherapy. Heretofore the radiographic laboratories in the hospitals have been under the direction of specialists who are not graduate physicians. Their number was small, dating for the most part from the beginning period of the use of roentgen rays. Many of these men had adapted themselves to this work in a remarkable manner. Occasionally, however, examples of fraud in the form of "trick films," in connection with claims following occupational accidents, have been discovered. Physicians have for some time shown displeasure at the rôle assumed by nondiplomaed radiographers, whom they have charged with a lack of knowledge of anatomy and with not always knowing what part of the body merited particular attention for the establishment of a diagnosis. With regard to treatment, this constituted, it was pointed out, the illegal practice of medicine and entailed serious risks for the patients. As the result of demands made by the medical syndicates, parliament inserted this regulation in the new law. Nondiplomaed hospital radiologists appointed more than thirty years ago, and who have won the respect of physicians by the meritorious quality of their services, are to be admitted to registration.

A New Museum of History and Art

Mr. Mourier, director of the Assistance publique, has created a special museum designed to house historical relics and art objects derived from hospitals, hospital chapels and offices of charitable organizations in Paris. The museum is located on the banks of the Seine, quai de la Tournelle, in the vast apartments of the old Hôtel de Miramion, erected in the seventeenth century by Mansard, and which served in 1691 as a convent. After 1792 the building was occupied by manufacturers of weapons. In 1810, Napoleon I turned over the property to the Assistance publique de Paris, which installed therein its central pharmacy. The latter gradually accumulated a collection of relics and art objects derived from razed or

remodeled hospitals, the preservation of which appeared to present some degree of interest. There is a collection of 740 crucibles and various types of pharmacist's equipment, including earthenware from Delft, Nevers, Rouen, Sceaux, St. Cloud and Sinceny. Much of the material has an inestimable value. The construction of new pharmaceutic laboratories, with modern equipment, will vacate the six large halls of the ground floor, adorned with beautiful wainscoting of the Renaissance period, where the collection of pottery was supplemented by numerous art objects for which there seemed to be no place in the modern hospitals: paintings, sculptures, engravings, artistic furniture, placards, sketches and voluminous correspondence. There is a fine bust of the financier Baujon, by Houdon; a portrait of Madame de Staël, founder of the Hôpital Necker, by Duplessis; a portrait of St. Vincent de Paul and the "dames de la charité" (seventeenth century). The fine pieces of furniture of the period of Louis XV, the Regency and Louis XVI are numerous. There is a collection of ironwork derived from chapels: mortars, pewters, shovels, locks, and wrought mantel-piece plaques. Among the choice old books is the "Livre de vie active," a parchment manuscript, with miniatures dating from 1483.

BERLIN

(From Our Regular Correspondent)

April 23, 1934.

The German Surgical Congress

The Deutsche Gesellschaft für Chirurgie held its session in Berlin, April 5-7. Professor Kirschner of Heidelberg, the chairman, took up his reply to the memorial of the Deutsche Orthopädische Gesellschaft. He brought out that it will not do to turn over entirely to the orthopedists the surgery of the motor and the supporting systems, leaving to the surgeon the remainder of the body. For the orthopedist, the bloodless measures and those requiring apparatus should be in the forefront. The special test for orthopedists in the state examination is not feasible (THE JOURNAL, Sept. 16, 1933, p. 942). Olivecrona of Stockholm spoke on technic and results of surgical operation in tumors of the auditory nerve. As a pupil of Cushing, he stated that in America the mortality resulting from the application of the intracapsular enucleation method had been reduced to from 4 to 10 per cent. None of the patients, however, regain their full working capacity. Patients operated on die in from three to four years at the latest, as the result of recurrences. Olivecrona removes, after the enucleation of the tumor, also the so-called capsule. The working capacity of the patients has since been considerably improved; the mortality, however, has increased to about 20 per cent. The cerebellar tumors observed in the Kiel clinic were 50 per cent inoperable by reason of their malignity (medulloblastomas, ependymomas). Traumatic and nontraumatic thickening of the dura, as Jentzer of Geneva brought out, may resemble brain tumors. A technic for ventriculography, suggested by Peiper of Frankfort-on-Main, consists in introducing a cannula within a ventricle and a second within the spinal canal. As spinal fluid flows from the lumbar cannula, the ventricular cannula automatically draws in air. Of course this method is applicable only in case all the cerebrospinal fluid passages are fully open. For the regulation of the blood flow through the brain, Schneider of Breslau has found, by means of experimentation, reflexive processes that are evidently controlled by way of the meningea media. Following epinephrine, glyceryl trinitrate and hypertonic solution of dextrose, better blood distribution occurs. Carbon dioxide does not suppress the blood flow through the brain. According to the experiences of the surgical clinic in Tübingen, spinal anesthesia is to be recommended for these operations, to which, as Kirschner himself suggested, scopolamine may be added intravenously by the drip method in order to induce partial anesthesia.

K. H. Bauer of Breslau discussed the sterilization law in its relation to surgery. A responsibility rests on the surgeon with reference to congenital hereditary malformations and their operative removal, but he cannot influence the massa hereditaria. Hence, in the event that an injury of the massa hereditaria occurs, sterility must result, even though the external injury in the person so affected has been effectively repaired. At least one million persons in Germany come within the scope of the sterilization law. In the interpretation of the law a decisive rôle is assigned to the physician. The commentary on the law published by the government needs to be further elaborated in order that mild and severe injuries may be more sharply differentiated.

The next topic was "Therapy of Pyogenous Infections and of Their Sequelae." Every infection—even the slightest—is to be regarded as a disorder of the whole organism. In combating an infection not only must the local manifestations be treated but also the general defense forces of the organism must be strengthened. There are four phases of the treatment: strengthening of the general resistance, increase of the local defense, elimination of the disease foci by opening the wound, and, finally, the protection and immobilization of the organ concerned. For drainage, a proper incision must be promptly made without causing disturbances of function. In furuncles and carbuncles, injections of the patient's own blood into the surrounding area are recommended. Remedies having a strong chemical action that injures the tissues should not be employed. Incised wounds should be left alone, after being covered with a moist bandage or an ointment plaster. An incision with an electric knife is to be regarded as the most conservative mode of dividing the tissues in inflammations. Induced ischemia should be avoided from principle, in these operations. Infiltration anesthesia is rejected by Lexer. Fistulas should not be treated with injections and tamponades but, if in any wise possible, with broad cleavage. Lexer called special attention to the results if osteomyelitis is not promptly and adequately opened up. What holds good for acute inflammation of the soft parts is justified here also.

In recent injuries, burns and phlegmonous inflammations, Löhr of Magdeburg employs cod liver oil ointment. Bacillus coli, staphylococci and streptococci are destroyed in cod liver oil. He reported therefore on his plaster of paris-cod liver oil method in the treatment of acute and chronic osteomyelitis. After the periosteum has been split, a large plug of cod liver oil is inserted; a loose soft-part suture is applied, and then a plaster cast, which is left on for from two to three weeks. Opportunity is offered for the pus to flow off from under the bandage. In chronic cases, radical opening of the bone is indicated; then application of the plug of cod liver oil ointment and a plaster cast. Some of the advantages claimed for the method are that no painful changing of bandages is needed, and no abscesses or fistulas develop.

Sauerbruch of Berlin spoke on the operative treatment of bronchiectasia. He emphasized that the unilobar appearance of this disease in children is to be regarded as congenital, contrary to the conception of most pediatricians, who assumed inflammatory causes. This view of Sauerbruch was confirmed by numerous preparations of the Berlin Pathologisches Universitäts-Institut. The surgical treatment consists in the radical removal of the affected lobe of the lung, which is all the more to be recommended now that the operative technic is sufficiently developed and since internal treatment never effects a cure. Fifty-eight cases have been treated thus far. Six patients died following the operation; the survivors are able to work, although two have a fistula. Treatment of noncongenital bronchiectasias does not give such good results.

The next main topic, "Surgery of Rectal Cancer," was presented by Goetze of Erlangen, who stressed the importance of a rectal examination for a prompt diagnosis. The sacral operative method is to be preferred. Liver metastases cannot be diagnosed by means of liver function tests. In contrast with this operative method, the abdominal route is a menace. For all these interventions, the high frequency current is highly recommended. Goetze performed in a third of his cases a one-stage, radical operation, with from 10 to 15 per cent of mortality. If the carcinoma is already causing intoxication, some time before the operation proper an artificial anus should be constructed in the sigmoid. In addition, a diet poor in salt should be given, and the circulation should be supported in anticipation. A further third of all cases can be treated with a two or three stage operation. The remaining third cannot be subjected to a radical operation; in these cases, rectotomy in combination with coagulation was chiefly employed. Also roentgenotherapy can be used—but not alone. Kirschner of Heidelberg recommended his combined sacral and abdominal method, which is applied by two operators working simultaneously, with the patient in a position especially adapted to the operation. The advantage is a gain in time, together with the possibility of a particularly radical procedure; the mortality, however, is higher.

Löwen of Königsberg organized in East Prussia a voluntary systematic examination of the healthy population. First, 1,200 women who considered themselves healthy were examined for cancer of the breast. One grave cancer, two suspicious cases and 103 cases of old chronic inflammations were discovered. Of ten women who had previously undergone an operation for cancer, eight were in good health.

Felix of Berlin reported that his experiments had shown that both paralyzed and hypertrophic muscles can be favorably influenced by certain types of nerve transplantation. It is possible that such experimentation will develop methods for the surgical treatment of disorders of the heart muscle.

In hypertrophy of the prostate, Wildegans of Berlin and Kraas of Frankfort-on-Main recommended diathermy operations by the intra-urethral route, usually requiring several stages. Hemorrhage can thereby be readily controlled. Even in aged and weakly patients, good results are secured.

In other papers, numerous fields of surgery were considered. Professor Magnus, who was recently given a chair at the University of Berlin, was elected president of the society.

ITALY

(From Our Regular Correspondent)

April 15, 1934.

Surgery of Gastroduodenal Ulcer

Laccetti addressed the Accademia delle scienze medico-chirurgiche of Naples on the surgical treatment of gastroduodenal ulcer. He pointed out that, in the midst of uncertainty of the etiologic factor, there is a tendency to attack the ulcer directly or to eliminate it together with neighboring tissues. The speaker in a case of postoperative jejunal ulcer operated by the transgastric route, treating the ulcer with the thermocautery. The result was favorable. Laccetti believes that, while gastro-enterostomy remains the preferred operation in the pyloric cicatricial type of ulcer, it can be omitted in duodenal ulcer and the Judd operation substituted.

Professor Cavina, in discussing this intervention before the Accademia medico-fisica fiorentina, said that he endeavored to remove the local lesion, to destroy the muscular activity of the pylorus and to eliminate two of the principal symptoms of duodenal ulcer; namely, stasis and gastric hyperacidity. The Judd operation is indicated in young persons in ulcers of recent origin, particularly of the anterior wall of the bulb, in cases in which the duodenum is fairly mobile and not too much deformed. In seven cases in which Cavina operated recently there was an excellent immediate result, and the remote result proved to be fairly favorable.

Physicians Made Senators

Professors Pende and Micheli were recently made senators. Prof. Nicola Pende, born in 1880, was one of the organizers of the University of Bari (1924), became instructor in clinical medicine, and was the first to fill the office of president. In 1925 he took over the management of the Clinica medica in Genoa, where he founded an institute of biotypology. Among the researches of Pende may be mentioned demonstration of the secretory and trophic influence of the splanchnic nerves and the solar plexus on the suprarenal capsules and the proposal (suggested by Professor Pieri, surgeon) to resect the splanchnic nerve in patients with angiospasm due to hypersuprarenalism. His chief works are "Pathology of the Sympathicus" (in collaboration with P. Castellino), "Treatise on Endocrinology" and "Synthetic Treatise on Pathology and Clinical Medicine."

Prof. Ferdinando Micheli was born in 1872. He became professor of pathology at Siena and at Florence and from 1921 was director of the Clinica medica at the University of Turin. The principal subjects of his researches have been pernicious anemia, hemolytic icterus, paroxysmal hemoglobinuria, epidemic encephalitis, the serology of malignant neoplasms, and leukemia. He contributed an article on pulmonary tuberculosis for the recently published Italian treatise on internal medicine. He is codirector of the medical journal *Minerva medica.*

The Medicosurgical Congress of Calabria

The second Medicosurgical Congress of Calabria was held in Reggio Calabria, under the chairmanship of Prof. Rocco Jemma. A paper was presented by Salvadori on laryngeal tuberculosis. In a group of 814 patients with pulmonary tuberculosis, the speaker studied 148 patients with laryngeal tuberculosis. While recognizing tuberculous sputum as a frequent cause of laryngeal tuberculosis, recent research attributes importance to transmission by the blood stream or by the lymph glands. Tropea emphasized that the treatment of both the lungs and the larynx should be equally vigorous, and he assigned special importance to sanatorium treatment and to collapse therapy. He refuted the old prejudice that mountain climate is contraindicated in tuberculosis of the larynx. It is advisable to examine laryngoscopically all patients affected with pulmonary lesions.

Puca presented a paper on epilepsy. He said it is the whole organism, mental and somatic, that participates in the morbid process and not cyclically but continuously. He stated that in the regions having the greatest wine consumption there is the highest incidence of epilepsy.

Professor Stanziale

The death of Prof. Rodolfo Stanziale, director of the Clinica dermosifilopatica in Naples, is announced. A pupil of Professor Cantani, Professor Stanziale studied bacteriology at first and for twelve years devoted himself to pathologic anatomy and histology. During that period he published his important work (still a classic) on the changes produced by syphilis in the arteries and particularly in the brain. He devoted himself later to studies on cutaneous tuberculosis, the experimental transmission of leprosy from man to the rabbit, and pemphigus vegetans (Neumann). He was appointed professor of the pathology and clinical aspects of dermatology and syphilis, first at Messina and then at Naples, and later published a book on the prophylaxis of the venereal diseases. He founded at Naples the Istituto fotoradioterapico and was awarded a medal for his services in public health. His constant study of leprosy

made him one of the foremost leprologists in the world, and he was chosen as the Italian delegate to the third International Conference on Leprosy, held in Paris.

The Incidence of Mental Diseases

The Istituto centrale di statistica has published a report from which it appears that there is a gradual and continuous increase in the number of inmates of the Italian psychiatric hospitals. The incidence is highest in northern Italy (and among the male sex) and is the lowest in southern Italy. The most frequent types are the affective psychoses, and particularly the subgroup of the depressive and melancholic states. The frequency of alcoholic psychoses shows a slight decrease. The manifestations dependent on syphilitic infection are increasing, particularly as to the types of dementia paralytica. The mortality in this disease appears, however, to be diminished in direct relation with the use of febrile treatment.

RIO DE JANEIRO

(From Our Regular Correspondent)

April 15, 1934.

Diagnosis of Thoracic Aneurysms

Dr. Manoel de Abreu, roentgenologist, addressed the Society of Medicine and Surgery of São Paulo on thoracic aneurysms. The diagnosis of aneurysms of the thoracic aorta, he said, was previously based on the relations between the tumor as revealed by roentgenology and the aortic tube as outlined by teleroentgenography in various positions. Now "blood hydrodynamics" is considered fundamental in any consideration of thoracic aneurysm. In a liquid mass in movement, hydrodynamics explains the development of centrifugal forces such as occur at the curves of rivers, the convex or external borders of which are deeply excavated while the concave or internal borders are flat. In closed tubes, as in the aorta, the blood stream pushed on by the left ventricle exerts on the vascular wall forces that obey the principles of hydraulics and give to the aneurysmal pouches their morphology and direction. Consequently, aneurysms of the beginning of the ascending aorta which are close to the heart are directed upward, to the right and forward; those of the terminal portion orient themselves upward; those of the transverse portion are directed in the horizontal plane; those of the descending portion go down. The weight of the aneurysmal mass deviates slightly from the direction of the axis of development of the mass. In general, one may say that the axis of development of aneurysms approximates a line that bisects the angle formed by the axis of the aortic segment and by the vertical line (gravity). Consequently the aortic segment in which the aneurysm forms determines the development of the sac and constitutes the basis of the differential diagnosis. One must not forget the changes due to the resistance of the bony breast plate, the vertebral column and the thoracic contents, principally the heart and the vessels of the hilus. The author discussed the practical use of the theoretical data given and showed teleroentgenographic plates of aneurysms of all segments of the thoracic aorta, of tumors and of other disorders of the chest.

Hospitals of Rio de Janeiro

The following hospitals are under construction:

The Hospital Jesus for children will have a capacity of 150 beds. It will also admit mothers whose infants are in the hospital. It will have equipment to give instruction to children who remain in the hospital a long time.

The 150 bed Hospital of Gavea will be in a locality accessible to the population of Gavea, Leblon, part of Botafogo and Copacabana. The Hospital of the Avenue 28th of September, in Villa Isabel, is more complete and larger than the others. It will have more clinics than have the other hospitals already started and also complete physical therapeutic services, roentgen therapy, hydrotherapy, mechanotherapy, and so on. It will attend also to other dependent services of the township, such as school clinics and health inspection of municipal employees, until central laboratories are installed. Its consultation rooms are arranged in such a way as to allow an attendance of thirty patients at the same time without overcrowding. The construction of the Central Hospital, on the Place of the Republic, is also well advanced. This hospital will accommodate 600 patients and have a teaching institute including a school for nurses and postgraduate courses, a library, conference rooms and museums; the municipal morgue for persons who have died in hotels or other public locations; and central laboratories of pathologic anatomy, of clinical investigation and of fabrication of medical products.

An Association of Physicians

The Paulist Association of Medicine has approved by a great majority the necessity of creating the Order of Physicians, as the basis of a program of vindication of the Brazil medical profession. The project includes compulsory organization of all physicians of the country and its complete autonomy. The order will represent medical practitioners before the public, campaigning for the adoption of laws protecting their moral and material interests and for measures of repression of the illegal practice of medicine; it will create a disciplinary council to enforce the observance of the code and demand that physicians who have studied abroad be naturalized and take a complete medical course in one of the official faculties of the country. It will elect its officers by direct vote.

JAPAN

(From Our Regular Correspondent)

April 30, 1934.

Night-Blindness in Soldiers

Dr. Y. Fujihira, ex-surgeon of the garrison hospital at Chiba, recently submitted his research on night-blindness in the army. He examined all soldiers in two regiments in which he served and found many cases of night-blindness. Examination of the soldiers' food convinced him that the direct cause of this disease is not the lack of vitamin A, but the influence of the direct light of the sun during daytime drill, and overwork. He states that night-blindness frequently develops in aviators who fly from daytime to night and in infantrymen, who drill during the day and work in the evening. His opinion has alarmed the military authorities, and they have undertaken a closer investigation of this problem.

Medical Bills in the Diet

A bill providing for the eugenic protection of the race, which was drawn up by the Japanese Eugenic Society, was presented for the first time in the diet. The bill proposes sterilization of criminals, persons with malignant hereditary diseases and similar cases. It is doubtful that the bill will be passed by the houses.

The lower house has agreed on new regulations to improve the status of midwives. This bill was presented last year but was not passed by the upper house. It is expected to be passed this year.

Regulation of School Lunches

The official regulation of school lunches in primary schools was first undertaken by the office of education in September 1932 to provide free lunches for school children who are undernourished or come to school without lunch. The office of education divided 513,330 yen among the fifty-three local governments for the following seven months in that fiscal year. During that period the system was put in force among 6,491 villages and towns, and the lunches were given in 11,047 schools.

The lunches were sold for 4 sen, but they consisted of nutritious food. As this system was planned to be an educational facility and not mere relief work, the school lunch was given to any child also who wanted it at his own expense. The total number of lunches at public expense amounted to 29,232,438. With the experience that has been gained the lunches will be better and will be served in more schools this year.

Memorial to Noguchi

In memory of the late Dr. Hideyo Noguchi of the Rockefeller Institute, a hall will be built on the site of the cottage where he was born beside Lake Inawashiro in northeastern Japan. The committee aims to collect 100,000 yen to erect the hall and to repair the old house where his parents and brothers and sisters lived. In the hall will be kept various articles he had used, some sent back from America. Marquis Okuma and Dr. Shinjyo, president of the Kyoto Imperial University, are members of the committee.

Personal

Dr. M. Nagayo, chief of the Epidemic Research Institute in Tokyo, resigned last year to become dean of the medical department of the Tokyo Imperial University. Dr. Y. Miyagawa of the same institute will succeed him.

Dr. K. Sudo, who is noted for his study of medical chemistry, died, January 7, at the age of 63. He retired in 1932 from his position as president of the Kanazawa Medical College. He was a self-taught man in the real sense and had never been to college. He obtained the doctorate through the examination for practitioners. For a short time he practiced medicine in Tokyo but soon gave it up and began research in medical chemistry.

Mr. Gunn of the Rockefeller Foundation was guest of honor at the home minister's dinner in recognition of his services in establishing an institute contributed by the foundation for training medical experts and workers.

Prof. S. Camboss of the medical college of São Paulo, Brazil, came to this country, January 22, with about fourteen medical students for an inspection tour. This was the first medical party to visit here from South America. All medical schools united in welcoming them. They visited medical centers all over the country for about one month. Dr. Camboss gave a lecture on blastomycosis at the meeting of welcome held by the medical and dental associations in Tokyo soon after they arrived.

Marriages

STANLEY EDWIN MCCLURE, Monon, Ind., to Miss Marian McGowan of Mankato, Minn., in Columbia City, April 22.

PAUL EMANUEL LANDMANN, Joliet, Ill., to Miss Aileen Marie Burkhardt of Dwight, at Plainfield, May 12.

ROY LESLIE KENWARD, Melvin, Ill., to Miss Frances Nonnenmacher of Dewitt, Iowa, at Watseka, May 5.

PARKER C. HARDIN, Arkansas City, Kan., to Miss Catherine Shaffer of Charleston, Ill., May 19.

FRANK HART PRIOR to Miss Elizabeth Skummer Bagley, both of Colorado Springs, May 22.

HALDON CHARLES KRAFT to Miss Mary Amanda Baker, both of Noblesville, Ind., May 10.

WILSON GRAFTON CLAGETT to Mrs. Mary Campion Laurel, both of Dayton, Ohio, April 29.

REASON LOUIS COPE, Marksville, La., to Miss Hazel Marquez of New Orleans, April 28.

JONAS BERK RAYMAN, Toledo, Ohio, to Miss Lila Tobin of Miami Beach, Fla., May 22.

NORMAN E. FISHER, Toledo, Ohio, to Miss Jeanne Littwitz of Dayton, May 30.

JAY DONALD MILLIGAN to Miss Leone Daus, both of Elgin, Ill., May 16.

Deaths

Carl Arthur Hedblom ● since 1926 professor of surgery at the University of Illinois College of Medicine, Chicago, died suddenly, June 6, of coronary thrombosis, while attending a meeting of the American Surgical Association in Toronto, Canada. Dr. Hedblom was born in Dayton, Iowa, March 5, 1879. He was educated at the Colorado College where he received his B.A. in 1907, M.A., in 1908, and an honorary D.Sc., in 1921. In 1911 he received his M.D. from Harvard University Medical School and a Ph.D. from the Mayo Foundation of the University of Minnesota in 1920. He was an intern at the Massachusetts General Hospital from 1911 to 1913 and then went to Shanghai, where he was professor of surgery at the Harvard Medical School in China until 1916. In 1916 he entered the Mayo Foundation as a fellow in surgery and from 1919 to 1924 was head of the section on general and thoracic surgery at the Mayo Clinic. Dr. Hedblom was professor of surgery at the University of Wisconsin Medical School, Madison, from 1924 to 1926, when he came as professor of surgery to the University of Illinois College of Medicine. He was a member of the Society of Clinical Surgery, American Surgical Association and the Western Surgical Association; member and past president of the American Association for Thoracic Surgery and fellow of the American College of Surgeons. Dr. Hedblom was head of the surgical department at the Research and Educational Hospital of the University of Illinois and senior surgeon to St. Luke's Hospital, consulting surgeon at the Edward Hines Jr. Hospital, Hines, Ill., and the Municipal Tuberculosis Sanitarium.

Louis de Lotbiniere Harwood, Montreal, Que., Canada; School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, 1891; dean and professor of gynecology, University of Montreal Faculty of Medicine; fellow of the American College of Surgeons; corresponding member of the Surgical Society of Paris; officer of the Legion of Honor of France; first vice president of the Association of French-Speaking Physicians of North America; on the staff of L'Hospital Notre-Dame; superintendent of the Radium Institute of the Province of Quebec; aged 68; died suddenly, May 15.

Carroll W. Allen ● New Orleans; Tulane University of Louisiana Medical Department, New Orleans, 1901; formerly professor of clinical surgery at his alma mater and professor of clinical anesthesia at the graduate school of medicine; fellow of the American College of Surgeons; aged 59; author of "Local and Regional Anesthesia"; on the staffs of the Touro Infirmary and the Southern Baptist Hospital, where he died, April 14, of heart disease and diabetes mellitus.

Calvin Fremyre Barber, Brooklyn; College of Physicians and Surgeons in the City of New York, medical department of Columbia College, New York, 1882; fellow of the American College of Surgeons; for many years on the staffs of the Kings County Hospital, Coney Island Hospital and the Samaritan Hospital; chairman of the board of the Caledonian Hospital; aged 74; died, May 12.

Edwin A. Stevens ● Mayfield, Ky.; University of Louisville (Ky.) School of Medicine, 1885; past president of the Graves County Medical Society and vice president of the Kentucky State Medical Association; formerly member of the board of education and mayor; aged 70; medical superintendent of the Mayfield Hospital, where he died, May 4, of cerebral hemorrhage.

Stephen Andrew Mahoney ● Holyoke, Mass.; Harvard University Medical School, Boston, 1889; member of the New England Obstetrical and Gynecological Society and the New England Surgical Society; fellow of the American College of Surgeons; on the staffs of the House of Providence and the Holyoke Hospital; aged 71; died, March 30, of coronary thrombosis.

Joseph L. Spruill ● Jamestown, N. C.; University of Maryland School of Medicine, Baltimore, 1895; past president of the Seaboard Medical Association and the Guilford County Medical Society; aged 63; medical superintendent of the Guilford County Tuberculosis Sanatorium, where he died, May 5, of carcinoma of the urinary bladder with metastasis.

Sidney B. MacLeod ● Chicago; Northwestern University Medical School, Chicago, 1897; past president of the American Association of Railway Surgeons; fellow of the American College of Surgeons; on the staff of the Jackson Park Hospital; aged 59; died, April 3, of coronary thrombosis and appendiceal abscess.

Albert Heman Ely, Cold Spring Harbor, N. Y.; College of Physicians and Surgeons in the City of New York, medical department of Columbia College, 1888; member of the Medical Society of the State of New York; for many years on the staff of the Southampton (N. Y.) Hospital; aged 73; died, April 26, in the Huntington (N. Y.) Hospital.

Wilfred Anthony Ash ● Seattle; Creighton University School of Medicine, Omaha, 1923; fellow of the American College of Physicians; aged 37; on the staffs of the Harbor View Hospital and the Providence Hospital, where he died, April 17, of pneumonia, following an injury received in a fall in his garage.

Fulton R. Stotler, Wilkinsburg, Pa.; Jefferson Medical College of Philadelphia, 1869; member of the Medical Society of the State of Pennsylvania; for many years director of the city board of public education; physician in charge of the Home for Aged Protestant Men and Couples; aged 86; died, April 28.

Joseph Andrew Smith, Worcester, Mass.; College of Physicians and Surgeons, Boston, 1914; member of the Massachusetts Medical Society; also a dentist; veteran of the Spanish-American War; aged 59; formerly on the staff of St. Vincent Hospital, where he died, April 16, of chronic myocarditis.

Isaac Beckett Smith, Brooklyn; College of Physicians and Surgeons in the City of New York, Columbia University, 1891; formerly chief of the bureau of preventable diseases, state department of health; on the staff of St. Mary's Hospital; aged 68; died, April 10, of coronary thrombosis.

Harry Floyd Emert ● Sarles, N. D.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1911; president of the North Dakota State Board of Medical Examiners; formerly mayor of Sarles; aged 48; died, May 8, in a hospital at Devils Lake, of pneumonia.

Harry Flower Shipley, Granite, Md.; Baltimore University School of Medicine, 1898; for many years physician at the Woodstock (Md.) College and deputy health officer of Baltimore County; aged 60; died, May 10, in the University Hospital, Baltimore, of cerebral hemorrhage.

Edwin Knickerbocker Losee, Upper Red Hook, N. Y.; College of Physicians and Surgeons in the City of New York, medical department of Columbia College, New York, 1888; member of the Medical Society of the State of New York; aged 67; died, April 13, of embolism.

Hayward Warren Cushing ● Boston; Harvard University Medical School, Boston, 1882; member of the American Surgical Association; fellow of the American College of Surgeons; consulting surgeon to the Boston City Hospital; aged 79; died, May 8, of cerebral hemorrhage.

Winfield Bruce Anderson ● Brooklyn; Long Island College Hospital, Brooklyn, 1917; served during the World War; on the staffs of the Bay Ridge Sanitarium, Midwood Sanitarium, Victory Memorial Hospital and the Samaritan Hospital; aged 39; died, May 20.

Jere Dewey Eggleston ● Meriden, Conn.; College of Physicians and Surgeons in the City of New York, medical department of Columbia College, New York, 1879; formerly on the staff of the Meriden Hospital; aged 80; died, May 26, of cerebral hemorrhage.

O. P. Nuckols, Pineville, Ky.; University of Tennessee Medical Department, Nashville, 1891; member of the Kentucky State Medical Association; secretary and past president of the Bell County Medical Society; aged 72; died suddenly, in April, at Middlesborough.

James Merle Scribner ● Lowell, Mass.; Tufts College Medical School, Boston, 1927; member of the New England Obstetrical and Gynecological Society; on the staff of St. Joseph's Hospital; aged 31; died, May 11, at his home in West Medford.

Charles Fremont Bennett, Pomona, Calif.; University of Michigan Medical School, Ann Arbor, 1879; aged 78; died, January 18, in the Los Angeles General Hospital, of diverticulum of the esophagus, pulmonary tuberculosis and bronchopneumonia.

William W. Smith, Louisville, Ky.; Medical College of Ohio, Cincinnati, 1891; formerly member of the state legislature; aged 66; died, May 2, in St. Anthony's Hospital, of a fracture of the hip sustained when he tripped on a rug in his home.

Samuel Schneider, New York; University and Bellevue Hospital Medical College, New York, 1899; member of the Medical Society of the State of New York; aged 61; died, April 14, in the Park East Hospital, of carcinoma of the colon.

George Ellis Towle, Wisconsin Rapids, Wis.; Marquette University School of Medicine, Milwaukee, 1913; served during the World War; formerly health officer of Marshfield; aged 46; died suddenly, February 27, of cerebral hemorrhage.

Joseph Henry Litterer ● Nashville, Tenn.; Vanderbilt University School of Medicine, Nashville, 1917; member of the American Society of Clinical Pathologists; served during the World War; aged 42; died, April 4, of heart disease.

Pinkard Charles Downs Jr., Chicago; Meharry Medical College, Nashville, Tenn., 1916; member of the Illinois State Medical Society; aged 50; died, March 15, in the Cook County Hospital, of pericardial effusion and coronary occlusion.

Gaius Fabius Brooks, Ysleta, Texas; University of Nashville (Tenn.) Medical Department, 1883; Vanderbilt University School of Medicine, Nashville, 1889; member of the State Medical Association of Texas; aged 80; died, April 28.

Aaron R. Elder, Harrisonville, Mo.; Missouri Medical College, St. Louis, 1884; member and at one time president of the board of education; county health officer; on the staff of the Harrisonville Hospital; aged 80; died, April 5.

Wilson Adolphus Allen, Rochester, Minn.; Hahnemann Medical College and Hospital, Chicago, 1879; member of the Minnesota State Medical Association; aged 100; died, May 11, in a local hospital, of injuries received in a fall.

Edgar Voorheis Beardslee ● Detroit; University of Michigan Medical School, Ann Arbor, 1916; aged 49; on the staff of the Highland Park (Mich.) General Hospital, where he died, May 10, of carcinoma of the colon.

Thomas Jobson Swantz, South Bend, Ind.; Northwestern University Medical School, Chicago, 1907; member of the Indiana State Medical Association; aged 56; died, May 10, of myocarditis and diabetes mellitus.

Frank Emens, Trinity, Ala.; Hospital College of Medicine, Louisville, 1898; member of the Medical Association of the State of Alabama; member of the board of education; aged 64; died, April 26, of pneumonia.

Charles Samuel Shultz ● Spirit Lake, Iowa; State University of Iowa College of Medicine, Iowa City, 1891; secretary of the Dickinson County Medical Society; aged 70; died, April 12, of pneumonia.

Lucius E. Ellis, Orrick, Mo.; University Medical College of Kansas City, 1905; member of the Missouri State Medical Association; aged 56; died, April 20, of malignant brain tumor and nephrectomy.

Colin William MacDonald, Boston; Bellevue Hospital Medical College, New York, 1887; member of the Massachusetts Medical Society; aged 76; died, April 19, of chronic myocarditis.

Noah Albert Grant Tesson, Kansas City, Mo.; Kansas City Medical College, 1895; member of the Missouri State Medical Association; aged 70; died, February 23, of coronary sclerosis.

John Calvin Stever, Bainbridge, Pa.; Jefferson Medical College of Philadelphia, 1877; member of the Medical Society of the State of Pennsylvania; aged 81; died, April 8, of arteriosclerosis.

Samuel Warren Miller, Denver; Jefferson Medical College of Philadelphia, 1884; member of the Colorado State Medical Society; aged 77, died, April 10, in Salt Lake City, Utah.

Charles Samuel Layton, Eloise, Mich.; Detroit College of Medicine, 1897; formerly on the staff of the Eloise Hospital; aged 62; died, April 20, in Detroit, of cerebral hemorrhage.

Minard J. Armstrong, Springfield, Mo. (licensed in Missouri in 1905); member of the Missouri State Medical Association; aged 53; was found dead, April 13, of angina pectoris.

Edward John Stephens, Utica, N. Y.; Albany (N. Y.) Medical College, 1881; aged 79; formerly on the staff of the Faxton Hospital, where he died, April 6, of chronic myocarditis.

Charles Bartlett Dearborn ● Mount Sterling, Ill.; Rush Medical College, Chicago, 1890; secretary of the Brown County Medical Society; aged 66; died, May 16, of cerebral thrombosis.

William Perry Stone, Palmer, Tenn.; Chattanooga (Tenn.) Medical College, 1897; member of the Tennessee State Medical Association; aged 66; died suddenly, April 15, of heart disease.

Thomas Huston Smith ● Burnham, Pa.; Baltimore Medical College, 1897; past president of the Mifflin County Medical Society; aged 63; died, March 20, of cerebral hemorrhage.

Howard Henry Drake ● Norristown, Pa.; Jefferson Medical College of Philadelphia, 1878; trustee at the Norristown State Hospital; aged 77; died, May 19, of heart disease.

Campbell A. Stokes, Edinburg, Ill.; Eclectic Medical Institute, Cincinnati, 1882; member of the Illinois State Medical Society; aged 75; died, April 22, of heart disease.

Carus Plumlee, Hot Springs, N. M.; Barnes Medical College, St. Louis, 1911; member of the New Mexico Medical Society; aged 50; died, April 7, of acute nephritis.

Edward Seguin, Eveleth, Minn.; School of Medicine and Surgery of Montreal, Que., Canada, 1899; aged 58; died, May 3, of acute fibrous pleurisy and bronchopneumonia.

William Findley Weikal, Middletown, Ohio; Eclectic Medical Institute, Cincinnati, 1903; aged 66; died, April 27, in a sanatorium at Cincinnati, of cerebral hemorrhage.

Ernest Owen Adams, Cleveland; Homeopathic Hospital College, Cleveland, 1893; aged 66; died, April 16, in the Huron Road Hospital, of cardiorenal disease.

John Peter Faber, Schenectady, N. Y.; Albany Medical College, 1905; member of the Medical Society of the State of New York; aged 56; died, April 9.

Alexander Felix Toohey, Beresford, S. D.; John A. Creighton Medical College, Omaha, 1899; aged 57; died, April 19, in a hospital at Sioux City.

Henry Russell Shotts, Linden, Ind.; Indiana Medical College, Indianapolis, 1877; aged 84; died, in April, at Lafayette, of injuries received in a fall.

Richard C. Taylor, Elburn, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1893; aged 73; died, April 25, of acute nephritis.

Moritz Loewenthal, Cleveland; Baltimore University School of Medicine, 1894; aged 73; died, March 30, of heart disease and arteriosclerosis.

Millard F. Biggers, Glasgow, Ky.; University of Tennessee Medical Department, Nashville, 1900; aged 69; died, May 6, of cerebral hemorrhage.

Ignatz Mayer ● Detroit; Medico-Chirurgical College of Philadelphia, 1894; aged 73; died, in April, at the Grace Hospital, of uremia.

Preston M. Edwards, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1893; aged 66; died, March 23.

Howard Oliver Allen, Longmeadow, Mass.; University of the City of New York Medical Department, 1879; aged 80; died, April 29.

Edward G. Lawton, Natchitoches, La.; Louisville (Ky.) Medical College, 1890; aged 68; died, March 11, of mitral regurgitation.

Ronald Levesque, Montreal, Que., Canada; School of Medicine and Surgery of Montreal, Que., 1912; aged 47; died, January 14.

Thomas Luther Lanier, Perris, Calif.; University of Tennessee Medical Department, Nashville, 1880; aged 85; died, March 31.

George Church Anderson, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1915; aged 41; died, April 17.

Aaron Godwin, Muscadine, Ala.; Atlanta College of Physicians and Surgeons, 1912; aged 47; died, January 17, of heart disease.

George J. C. Larsen, St. Louis; Marion-Sims College of Medicine, St. Louis, 1892; aged 67; died, April 16, of pneumonia.

Paul Frederick Eckstein ● Canonsburg, Pa.; University of Pittsburgh School of Medicine, 1920; aged 38; died, April 5.

Schuyler Lott, Waterloo, N. Y.; Albany (N. Y.) Medical College, 1868; aged 91; died, May 2, of bronchopneumonia.

Alexander Duncan Allen, Geneva, N. Y.; Syracuse University College of Medicine, 1880; aged 77; died, April 29.

Joseph P. Dyer, Jennings, Okla.; University of Louisville (Ky.) School of Medicine, 1909; aged 50; died, April 24.

Arthur E. Snepp, Dayton, Ohio; Ohio Medical University, Columbus, 1900; aged 61; died, May 5, of heart disease.

Robert H. Berg, Chicago; Jenner Medical College, Chicago, 1916; aged 56; died, May 22, of agranulocytosis.

Jefferson Moore Luff, Felton, Del.; Jefferson Medical College of Philadelphia, 1881; aged 75; died, April 8.

Eli Harman Porch, Philipsburg, Pa.; Medico-Chirurgical College of Philadelphia, 1896; aged 69; died, April 7.

Ambler Caskie, Richmond, Va.; Medical College of Virginia, Richmond, 1883; aged 78; died, April 6.

James M. Hammer, Fountain City, Tenn. (licensed, in Tennessee in 1889); aged 79; died, April 20.

Bureau of Investigation

STARDOM'S HOLLYWOOD DIET

In Which the Obese Are Again "Kidded by Experts"

"Stardom's Hollywood Diet, a Reducing Food," seems to be essentially 2¼ cents' worth of soya bean flour faintly flavored with cocoa and salt, and sold for from $1.00 to $2.00!

The product is put on the market by the Hollywood Diet Corporation of Chicago. The men behind it are reported to consist of two salesmen and an attorney. So far as is learned, no physician is an officer or director of the corporation. To include a lawyer in a company is a common set-up in the field of nostrum exploitation. The essentials to success in this field are salesmanship and enough legal talent to keep the salesmen from committing any technical violation of the law. It is quite unnecessary that any one in such a business should have even the faintest knowledge of medicine, pharmacy or chemistry. What sells a nostrum is the advertising, not merit.

In spite of the renaissance in curves, as typified by the popularity of Mae West, many American women still seek the

sylph figure by short-cut methods, and obesity cures are still popular. Such cures vary widely in composition. Some of them are for external application—salts to be put in the bath water, creams or soaps to be rubbed on the surface of the body. Others are for internal use—purgative pills, salines sold as "salts" or "crystals," chopped-up laxative herbs sold as "teas," thyroid substance in pills or capsules, and, even more recently, the dangerously potent dinitrophenol. Within the past year or two still another method of capitalizing on the desire for the slim figure has appeared. It consists in selling under a fancy name some simple food product of low caloric value which the obese are urged to use in the place of two of the three daily meals. Stardom's Hollywood Diet belongs to the latter group.

Naturally, in putting over a simple, inexpensive food product as an obesity cure sold at an exorbitant price, skilful advertising is called for. Much of the advertising of Stardom's Hollywood Diet is buncombe to the nth degree. Thus:

"Within thirty days you will thrill to your loveliest image; you will radiate a vital more slender charm."

". . . you'll be quite thrilled at the ease with which Stardom's molds your body into slender proportions; almost before you realize it, you will find your flabby tissues becoming firm, slender and alluring."

"After reducing with Stardom's Hollywood Diet you should look as young as you weigh, and feel as young as you look. Yes, you really should."

"The possibility of your having an exciting type of Hollywood figure is now so real as to be actually breath-taking."

This is some of the tosh that is dished up to the obese in order to get them to pay an extraordinary price for a most ordinary product.

In a circular dealing with this nostrum there appears under the heading "Certified—for Your Protection" what purports to be a certificate issued by a Chicago chemist. The certificate makes this chemist declare that the preparation contains an "abundance" of lecithin. In a letter to the Bureau of Investigation the chemist states that he actually reported that there was "only a trace" of lecithin! The published certificate also makes the chemist say:

"Stardom's Hollywood Diet is so well balanced and contains such complete and superior proteins, minerals, lecithin and vitamins that it can well replace one or two fat-forming meals each day without lowering your resistance or vitality. It will maintain the necessary reserve of the human body with nourishing elements that will not end in FAT."

From the explanatory letter sent to the Bureau of Investigation, it seems that the statement just quoted is a pure invention of the advertisers of Stardom's Hollywood Diet and formed no part of the chemist's original report!

Requests for information regarding Stardom's Hollywood Diet have poured in from all parts of the country, from the Atlantic to the Pacific and from Canada to the Gulf. For that reason, it was felt justifiable to investigate the preparation, so that information could be furnished both physicians and laymen. The report from the A. M. A. Chemical Laboratory follows:

REPORT

"The Bureau of Investigation requested the A. M. A. Chemical Laboratory to investigate Stardom's Hollywood Diet. Original packages were purchased on the open market. The label bore the following notation:

" 'Stardom's Hollywood Diet—A Reducing Food Containing Vitamins A-B-C-D-E. No Drugs. No Laxatives. A Pure Food Product. Reduce With Safety.'

"A cursory examination indicated that the product was apparently not a drug but consisted of a 'feed.' It was deemed advisable to have the product analyzed by a consulting laboratory specializing in foods and feeds, rather than by the A. M. A. Chemical Laboratory. The consulting laboratory reported that the product contained approximately 180 Gm. (6 oz.) of essentially vegetable material having a brown color and an odor resembling chocolate; it also contained a small amount of chloride. In addition, the product was also referred to a well-known food authority and microscopist, who reported that the sample consisted essentially of soya bean flour mixed with cocoa. Quantitative determinations yielded the following:

	per cent
"Moisture	3.1
Crude Protein (N × 6.23)	38.3
Crude Fat	8.4
Ash	8.8
Crude Fibre	2.3
Nitrogen Free Extract	39.1
Chloride calc. as sodium chloride	1.73

"The foregoing compares favorably with what would be expected for soya bean flour though it is a little lower in protein than the average soya bean flour. This may be because of the dilution resulting from the addition of cocoa, or it may be due to a lower protein content in the soya bean flour used in the preparation of the product.

"From the foregoing analysis, it appears that Stardom's Hollywood Diet consists essentially of soya bean flour or meal to which has been added cocoa and some salt. No other constituents were found in the mixture."

From the chemical and microscopical analysis, it seems that Stardom's Hollywood Diet is essentially soya bean flour to which has been added a minute amount of cocoa and salt. Ordinary soya bean meal can be purchased for about $33 a ton. Refined soya bean flour sells for about $5 or $6 a hundred pounds. Assuming that the higher-priced refined soya bean flour is used in making Stardom's Hollywood Diet, there would be in a package which is labeled $2 (but is frequently sold for $1) 2¼ cents' worth (6 ounces) of soya bean flour, with an insignificant amount of cocoa and salt. This should allow a handsome margin for advertising, overhead and exploitation!

The woman who seeks a sylph figure is told to substitute a teaspoonful of the product to be taken in the place of breakfast and another teaspoonful to be taken in the place of luncheon. A heaping teaspoonful of Stardom's Hollywood Diet was found to weigh 8 grams. This would mean that the recommended breakfast and luncheon each would furnish less than 31 calories. The average fuel requirement for the breakfast of a woman leading a sedentary life is between 400 and 600 calories, the total fuel requirements for the day ranging from 1,800 to 2,300 calories. In her excellent book, "Feeding the Family," Doctor M. S. Rose, professor of nutrition at Teachers College, Columbia University, outlines a suggested reducing diet for an overweight woman. For a proposed breakfast in this diet Dr. Rose recommends a medium-sized apple, one egg, a slice of toast, a cup of coffee, and one and a half teaspoonfuls of skim milk, having a total fuel value of 200 calories. There is then to be taken at 10:30 a. m. some bouillon and a water cracker (22 calories); a luncheon, comprises a medium serving of lean cold roast beef, two thin slices of rye bread, some lettuce and cottage cheese salad (285 calories); at 4:30 a cup of tea and a water cracker (10 calories); dinner includes a large serving of boiled cod with lemon, one-half medium-sized boiled potato, a large serving of cauliflower, a scant teaspoonful of butter, watercress and egg salad with a small amount of French dressing, half an orange, and a demi-tasse of black coffee, making for the dinner 490 calories. Then at bedtime a half cup of hot skim milk, making an additional 45 calories, or a total fuel value for the day's food of 1,052 calories.

Such a diet has balance, which may be as important as total calories. The diet recommended in the exploitation of the nostrum Stardom's Hollywood Diet must of necessity be hopelessly unbalanced. Then there is always the likelihood that a woman who has simply had a teaspoonful of soya bean flour for her breakfast and another teaspoonful of the product for her luncheon will become so ravenously hungry by dinnertime that she will eat twice as much as she would under ordinary conditions.

It is hard to make the public understand that the reduction of weight is not necessarily the simple process that so many consider it. The senseless taking of "salts," "crystals" and the innumerable other purgatives that are sold as obesity cures, the unwise self-administration of the potent thyroid and of the much more dangerous dinitrophenol, must, in the aggregate, do the public health of the country incalculable damage. Because individuals taking such treatments only occasionally die from the results, the belief has developed that there can be no particular harm in taking the innumerable nostrums put out by shrewd exploiters who literally live on the fat of the land.

Correspondence

HYPERPARATHYROIDISM

To the Editor:—In THE JOURNAL, May 26, page 1764, appears an editorial entitled "Hyperparathyroidism: A Chapter in Successful Laboratory Research." This editorial presents a misleading picture. Mandl is a surgeon; the finest piece of writing that has ever been done on this subject is by Donald Hunter of London; the interest in parathyroidism in America is due more to the clinical work of Dr. Max Ballin than to any other person or group of persons. The American Medical Association conferred its gold medal on Dr. Ballin for his presentation of this subject at the New Orleans session. The enormous importance of the roentgenologists' contributions to this subject is entirely ignored—such work as Camp's at the Mayo Clinic.

Most unfortunate of all, the most positive statement in the editorial is incorrect; namely, that the operation should not be attempted unless the blood chemistry is thus and so. Aside from ample clinical examples which have come under my observation, I would refer you to one of the Mayo staff meeting reports stressing the point that there are classic cases in which the tumor has been demonstrated that have never shown an abnormal blood chemistry.

At the Toronto meeting of the American Orthopedic Association, one of the authors referred to in the bibliography of

your editorial took Drs. Ballin and Funston to task for asserting that generalized osteitis fibrosa cystica is always associated with parathyroid tumor, saying that in Boston they had a case in a sea captain who had been operated on some three times or so and no parathyroid tumor was present. Since that time, on the insistence of the patient, and not because of the doctor's confidence in his blood chemistry results, the tumor has been located—too late, however, to help the patient.

The chapter of our knowledge of parathyroidism is not a subject that the blood chemist should select to deify his guild, but rather a brilliant example of the results that can be obtained when the clinician, roentgenologist and pathologist work together for the common good.

PLINN F. MORSE, M.D., Detroit.
Pathologist, Harper Hospital.

YAWS AND SYPHILIS

To the Editor:—In THE JOURNAL, January 13, page 148, was a communication from Dr. C. S. Butler of New York dealing with the much debated topic of yaws and syphilis. With reference to a critical review that I made of the subject, which appeared in the *Tropical Diseases Bulletin*, the statement is made that "Blacklock proves the proposition that yaws and syphilis are the same thing." This appears to be a misapprehension on the the part of Dr. Butler.

My incentive in endeavoring to appraise the significance of the usual diagnostic points by which yaws is said to be distinguishable from syphilis was the necessity for putting the matter as clearly as possible for students. All that emerged was that the usual differential points will not in fact serve as diagnostic; this, however, does not appear to warrant the conclusion that I have proved that yaws and syphilis are the same. It is necessary to emphasize that this problem of yaws and syphilis is by no means easy to solve and is not yet solved.

If, as Dr. Butler complains, I did not make reference to his work, it was possibly because he is one of those who consider that it has already been settled and because the views of authors who had previously reached this conclusion were already included in my article. For example, I referred to the work of Branch, who, as early as 1907 in a paper in the *Annals of Tropical Medicine and Parasitology* (1:371, 1907), wrote, "We have seen that it is only in the frambesia eruption that yaws differs from syphilis, but even the frambesia is identical with the syphilitic papilloma on a moist surface."

Dr. Butler later discussed the contents of my paper in an editorial article in the *American Journal of Clinical Pathology* (2:239 [March] 1934). Here, in addition to the misapprehension of my views mentioned, there is introduced a very definite misrepresentation in the following paragraph: "Professor Blacklock quotes many more or less important writers along the line of the yaws-syphilis investigations but has little to say about his own countrymen who have borne the brunt of it in defense of what they knew to be true. Nor aught but silence has he for the group of Americans, principally U. S. naval medical officers, who have, by research and writing, defended Hutchinson's view for the past thirty years."

The reader derives from this statement a belief that the work of Americans on the question of yaws and syphilis has been entirely ignored in my papers. That this is not so must be clear when I point out that the following American authors are quoted by me in my two articles: W. J. Baetz, E. W. Goodpasture, H. H. Hazen, E. H. Hudson, G. R. Lacy, F. B. Mallory, Thomas McCrae, J. E. Moore, William Osler, G. W. Raiziss, M. A. Reasoner, Otto Schöbl, A. W. Sellards, Marie Severac, J. H. Stokes and F. L. Zimmermann.

Especial reference was made by me to the very important experimental work on the subject carried out by Sellards and Goodpasture in 1923 and Sellards, Lacy and Schöbl in 1926, and to the valuable contributions of many other American authors.

I am sorry to occupy your space with this sort of correspondence, but it is necessary to state these facts so that American readers may see from them that Dr. Butler's remarks are not justifiable.

D. B. BLACKLOCK, M.D., Liverpool, England.
Professor of Parasitology, Liverpool
School of Tropical Medicine.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THERAPEUTICS OF RUBEFACIENTS AND OF COUNTERIRRITATION

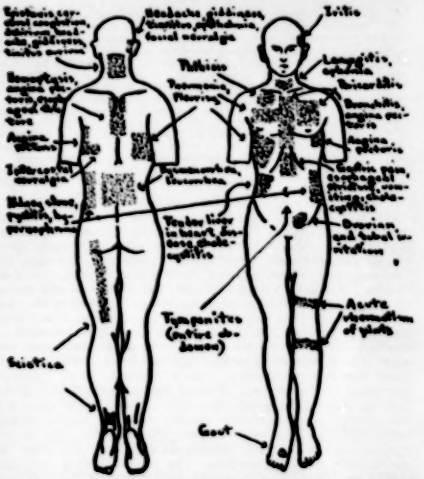
To the Editor:—Dozens of remedies to be rubbed in are advertised by radio, newspapers, posters and pamphlets for the treatment of any and all chest disturbances, whether of a respiratory muscular or bony origin. If there are any benefits that can be gotten from their use, exactly what can be confidently looked for? The desire to rub something on in my experience of thirty years is helpful only to those desiring to do something. As no known drug to date will destroy any bacillus or coccus in the chest, what possible benefit can result in smearing the chest with a malodorous, greasy ointment? Is it possible that there are reflexes that I know nothing about? I want to know. A patient with a temperature of 102 to 104 F., wrapped in woolen, covered with smelly greases, is an object of sincere pity to me. If there is anything at all to such treatment will you explain it all thoroughly? Millions of dollars are being expended annually for patent greases that I feel confident are highly injurious. Turn on the light. Please omit name.

M.D., Oklahoma.

ANSWER.—For purposes of the brief review of referred pain and counterirritation necessitated by our correspondent's inquiries, the central nervous system may be considered to receive sensory stimuli from three sources: (*a*) the skin, (*b*) the connective tissues, muscles, tendons and joints, and (*c*) the viscera. It is well known of course that, when painful stimuli or varying temperatures and pressures are applied to the skin, the site, nature and degree of these applications come fairly accurately into the consciousness, and it is also a matter of common experience as well as of experimental observation that some sort of sensory impulses reach the brain from the deeper lying structures and enable one to possess at all times an awareness of the position of one's limbs; furthermore, sensations of pain and pressure may also arise from muscles, tendons, joints and connective tissues. But in health nothing comes steadily into consciousness that reminds one of the presence of the visceral organs, though many of them are continuously in active motion. The parietal pleura may give rise to pain because of its partial innervation by the intercosal nerves, but the lungs and heart are insensitive except to traction. The parietal peritoneum also is sensitive, especially to traction; the mesenteries are sensitive to traction but they, as well as the substance of the stomach (including the mucosa), the intestine and the liver may be cut without pain, as may the kidneys (after removal of the fatty capsules) and the bladder, though the latter will not submit to being pulled. It is probable that the pains of intestinal colic, labor, dysmenorrhea, peptic ulcer and the distended liver of cardiac decompensation are due to changes in the tension of the parietal peritoneum and the mesenteries, for such diseases as pulmonary tuberculosis, chronic nephritis and carcinoma of the liver may be entirely painless. Nevertheless the allegedly insensitive organs may at times register the insult that is being offered them by causing certain areas of skin to become both painful and hyperesthetic (hypersensitive) to usual stimuli. This is the phenomenon that is called "referred pain" and it is explained as follows:

The development of the skeletal, muscular and nervous structures of the human as of all other vertebrate embryos is of a segmental nature, as is evidenced by the fact that the afferent (toward the brain, i. e., sensory) fibers in the dorsal roots of the spinal nerves come from definitely segmented areas of the skin. Some of these areas are lower than the segments of the cord which their nerves enter because of the downward course taken by the nerves during growth, but by severing all the dorsal roots save the one in question at the moment it is easy

to observe the relationship of the remaining clearly demarcated area of skin sensitivity to the segment of the cord at which the nerve enters. The muscles are also considerably displaced from their primitive positions during development, but it is nevertheless possible to trace their nerves also to a portion of the cord which was a part of the same segment from which the muscles originally derived. Now the dorsal roots also receive afferent fibers from the viscera; they follow the course of the autonomic nerves but they are distinctly not a part of the autonomic nervous system, since they do not form synapses in any of the ganglions and plexuses of this system and have been shown to be similar in structure and to have had an analogous segmental origin as the spinal nerves from the muscles and skin. The internal organs have descended too during development but their afferent nerves go back to the portion of the cord representing in each instance the segment from which both the nerves and the organ developed. If one such segment of the cord is considered—for example, a certain left cervical segment—into whose posterior spinal roots there enter sensory fibers from both the organs and skin areas that originally budded off from this segment, one can understand how stimuli passing up from the organ may be reflected in the skin area—how coronary pain can be felt in the left shoulder and



Usual points of referred pain and sites at which local application of "counterirritants" may be expected to be the most helpful.

arm and over the sternum and up into the anterior neck and jaws. Perhaps it is not precisely understood, but at least the close association of fibers from distant and unlike parts at the point of their common embryonal origin is seen. Clear understanding of the subject has been attained by no one as yet, but the hypothesis of Mackenzie (Symptoms and Their Interpretation, ed. 4, 1920) is a distinct advance toward exact knowledge. According to this conception, irritation of an organ causes a play of impulses to pass along its afferent fibers to their segment in the cord; higher than this they cannot rise for some reason (at least they do not come into the consciousness as "pain"), but the incessant bombardment of these impulses causes an "irritable focus" to appear in the cord at this point. At the same time, however, normal afferent impulses from the skin and muscles are reaching this segment and when they pass through the irritable focus they are sufficiently disturbed to signal pain to the brain. What comes then into consciousness is the usual pain in the skin, though the stimulus was actually applied higher up the nerve. Weiss and Davis (*Am. J. M. Sc.* **176**:517 [Oct.] 1928) have felt that a test of this hypothesis would be to block the afferent cutaneous impulses from painful skin areas in visceral disease by infiltration of the site with a local anesthetic. This they did in a number of cases of referred pain of cardiac, pulmonary, pleural, esophageal, gastric, gallbladder, cecal, kidney and pelvic origin, as well as in a few instances of artificially induced referred pain in normal subjects, and were able in each case to obtain considerable, often complete, relief.

The accompanying diagram shows the usual points of referred pain and the sites at which local application of "counterirritants" may be expected to be the most helpful. Why irritation over the painful area, which would seem to be just the opposite of the method successfully employed by Weiss and Davis, should cause the disappearance of pain is also not entirely understood, but it is worthy of note that the congestion and burning characteristic of rubefacient action are often succeeded by more or less anesthesia. Macleod (Physiology and Biochemistry in Modern Medicine, ed. 6, 1930) prefers to relate the phenomenon to the competition of incompatible reflexes for the control of a common motor path, in which case the one that will succeed in gaining control and in suppressing the other will depend on the relative strengths of the stimuli. He sites an interesting experiment of Head, who was an early investigator in this field: "The tip of the glans penis is supplied with receptors for cold and pain but may be devoid of heat spots. If it is dipped into water at 40 C. the pain spots alone are stimulated and a disagreeable painful sensation results. If the temperature is raised to 45 C. the cold spots also are stimulated and the pain is displaced by a vivid sensation of cold. About the corona of the penis heat spots also occurs. If this region is also immersed the quality of the sensation changes to one of exquisitely pleasant warmth. If the water employed in the experiment is at a temperature higher than 45 C. the painful sensation persists and no sense of warmth is felt. The sensations of pain and warmth are incompatible and cannot occur simultaneously." Edmunds and Gunn (Cushny's Pharmacology, ed. 9, 1928) think that something more than the relief of pain is at times induced by counter-irritation and that most probably an alteration in the caliber of the vessels is promoted. However, undeniably valuable as the effects are at times, our correspondent is certainly warranted in his opinion that money is being wasted in enormous amounts on "patent" counterirritant greases. Beckman (Treatment in General Practice, ed. 2, 1934) describes the preparation and uses of mustard poultices and plasters and turpentine stupes; it is probable that with these agents alone all that is possible with this type of therapy may be accomplished.

USE OF CAFFEINE SODIOBENZOATE IN PREMATURE INFANTS WITH KIDNEY DISTURBANCE

To the Editor:—I would greatly appreciate a discussion of the proper management of the following case, keeping in mind an absence of hospital and laboratory facilities: A premature infant of approximately eight months was very weak from birth and was unable to nurse. It was kept alive by incubator, oxygen, intraperitoneal saline solution, tube feedings of breast milk, and intramuscular injections of caffeine sodiobenzoate. The caffeine sodiobenzoate is the product of a reliable drug house. At the end of four or five days, the infant improved and was able to take its feedings from a small bottle. However, a sterile abscess had formed at the site of an earlier injection of caffeine sodiobenzoate. Since the abscess showed no tendency to absorb, it was opened widely with the evacuation of much semifluid necrotic material, no frank pus being present. About this time, edema was noted about the face and extremities, the urinary output having been scanty since birth. In spite of wide incision and daily irrigations of the wound with a sterile, isotonic solution, the wound showed no tendency to heal and the edema progressed to a point of generalized anasarca. During this time almost no urine was passed. This was highly concentrated and contained a large amount of albumin, many hyaline casts and a few red cells. On the tenth day the infant died, presumably from acute nephritis. Points of interest to me are the following: Should caffeine sodiobenzoate be used for stimulation of the new-born and, if so, in what dosage? Does sterile necrosis often follow use of this drug in the new-born? In the case reported, what means if any could have been used to combat the nephritis, other than correct treatment of the wound? Should fluids by mouth have been restricted?

H. W. DOTY, M.D., Ashton, Idaho.

ANSWER.—Caffeine sodiobenzoate may be used as a stimulant in premature infants, although its use perhaps is not as frequent as some of the other stimulants. The development of a sterile abscess in the case under consideration should not be attributed to the drug or preparation used necessarily but rather to the infant's poor circulation and lack of absorption.

Atropine sulphate and epinephrine are frequently given hypodermically to premature infants as a stimulant. Perhaps aromatic spirit of ammonia in a dosage of from one to five drops by mouth is more frequently used. Its action is usually quite satisfactory. In a list of stimulants, brandy and whisky should be included and, depending on the indications present, may be given in amounts varying from three to ten drops every three hours.

The presence of acute nephritis in new-born premature infants has been observed under a number of conditions. In general

these are considered to be the result of infection. Syphilis should be named as a frequent etiologic factor in the producing of severe kidney changes. Transitory urinary changes may be seen when the mother is having acute nephritis or eclampsia. These changes usually clear spontaneously during the first two or three weeks. The development of "hydrops fetus universalis" has been shown to be related to the presence of nephritis in the mother during pregnancy. Edema in small premature infants is frequently seen during the first days of life, usually affecting the extremities and genitalia. A large number of these are probably the result of a circulatory weakness. The edema may involve the deeper structures and there may be fluid accumulation in the body cavities. The chilling of newborn infants and especially premature infants and the accompanying subnormal body temperature are always a factor in the production of edema. The special forms of edema, scleredema and sclerema are occasionally seen. It may be impossible to make an absolute differentiation between these.

So far as the treatment is concerned, as a general statement fluids by mouth should not be restricted. The maintenance of adequate fluid intake, normal body temperature and normal elimination are important.

MENSTRUATION AND ABNORMAL BLEEDING IN GIRLS

To the Editor:—I have a patient, aged 15 years, who began to menstruate at the age of 13. Menstruation occurred every twenty-eight days and was normal in amount for a few months. Then she began to flow more freely, until there have been times of five months' continuous bleeding from the vagina. Of course, there has been considerable weakness resulting from this loss of blood. Physical examination has been essentially negative except for secondary anemia. Blood examination about Sept. 1, 1933, showed: red blood cells, 3,260,000; white blood cells, 4,350; hemoglobin, 75 per cent. The following treatments have been used with no decrease of flow or improvement in any way: rest in bed; corpus luteum intramuscularly, 1 cc. daily for ten doses; ergot; calcium lactate; amnion S, 1 cc. daily for ten days intramuscularly; theelin, 1 cc. intramuscularly every day for seven days; ovarian substance; transfusion of blood from pregnant woman; curettement, negative; x-rays every month for seven treatments. Have you any suggestions for further treatments? Please omit name.

M.D., New York.

ANSWER.—This girl has had too many different forms of treatment, and apparently not one of them has been used sufficiently long to determine its therapeutic effect. It is assumed that the term negative curettement implies that a normal endometrium was found. From the history, however, a hyperplasia of the endometrium is suggested. Certain of the remedies used are entirely useless in the treatment of this condition, such as ovarian substance and estrogenic preparations (theelin, amniotin and the like). In some cases, Novak has obtained encouraging success with the use of an anterior pituitary-like luteinizing substance obtained from the urine of pregnant women (Antuitrin-S, Follutein). However, this form of treatment is usually temporary and must be repeated with each hemorrhage. Nevertheless it is preferable to the use of radiation therapy or operation in a girl of 15 years. Repeated small transfusions will help replace some of the blood that is lost and may improve the quality of the blood. Of course, a thorough general physical examination should be made to rule out any possible systemic cause and careful studies of the blood also should be made. Small doses of thyroid may be tried and occasionally repeated curettements have a curative effect. In some instances insulin produces a cessation of the irregular bleeding. As a last resort about 250 or 300 mg. hours of radium should be employed. This treatment may have to be repeated.

USE OF BLOOD INJECTIONS IN CEREBRAL HEMORRHAGE AT BIRTH

To the Editor:—Several days ago I was surprised to hear a lady say the following: "When my daughter-in-law's baby was born, the doctor used instruments. Three days after the birth the doctor told my son that he would transfer some of his (the father's) blood into the infant to forestall any chance of cerebral hemorrhage, which sometimes followed the use of instruments." The lady asked me if I had ever done it. I frankly told her no and, what was more, I had never heard of its being done, nor could I see the reason for waiting three days after the possible cause of hemorrhage before applying the remedy. However, being only a plodding country doctor of thirty-nine years' practice, I may have missed the technic. I write to you for the information. Is it modern practice to give an infant a transfusion of the father's blood three days after its birth to prevent the possibility of hemorrhage when instruments have been used? This patient lives in Salt Lake City, Utah.

M.D., Mich.

ANSWER.—The practice of injecting blood intramuscularly into babies who are suspected of having sustained intracranial hemorrhage is sanctioned by general usage. The administration of blood has also been suggested as a prophylactic remedy in babies whose birth has been prolonged or difficult or who have been delivered with forceps. It is not possible to explain exactly why the blood was injected on the third day in the case mentioned. It is known, however, that late hemorrhages may occur, that oozing may continue from the rupture of large or small vessels, and that the amount of damage resulting from a hemorrhage is in direct proportion to the quantity of blood that has been extruded. Briefly, the answer to the query may fairly be stated with the following assumption:

The physician probably suspected late hemorrhage or continued oozing, which led him to administer intramuscularly blood on the third day of the infant's life.

USE OF PATCH TESTS

To the Editor:—Please give me your opinion regarding the patch method used in testing with substances such as face powders and soaps, especially in cases in which there is a question of occupational responsibility, such as one using soaps and paints; also in those who may purchase certain articles of jewelry, ear drops, neck pieces, as furs and jewelry, if one were to use the articles such as soap, paint and face powers on the skin or, in other words, use a patch test that would be considered reliable as positive proof of that particular article being the cause of dermatitis. Please omit name.

M.D., Iowa.

ANSWER.—The question as stated is not entirely clear. Most likely the inquirer desires to have a general opinion of the value of patch tests in the diagnosis of hypersensitiveness to face powders, soaps, and the like. If the condition is a truly allergic one, such as a hyperesthetic rhinitis, asthma or eczema, the ordinary method of performing skin tests should be employed. In such instances the materials may be put on scratches made in the epidermis and a positive reaction may be expected in from fifteen to twenty minutes.

If the hypersensitiveness is not of the allergic type, the usual symptom is a dermatitis and scratch tests are of no avail. In such instances, patch tests are of value. The usual types of materials with which patch tests are rational are various house plants, wool, silk, cotton, fur dyes, ointments, lotions, soaps and creams. Synthetic jewelry, rims of spectacles and similar articles may cause a dermatitis and may be adapted to the method of contact tests. A positive patch test indicates that the patient's skin is sensitive to the material. It does not prove that the clinical dermatitis for which the patient consults the physician is necessarily due to that material. In the performance of patch tests it must also be borne in mind that many materials are irritating per se if allowed to be in contact with an individual's skin for any length of time. Hence the use of patch tests with such irritating materials as iodine solutions, mild caustics, tar and cleaning preparations must be carefully controlled by their action on normal persons. In general it may be said that the procedure of specific diagnosis by the patch method has found a considerable and widespread application in the field of dermatology and if used rationally will frequently point out the causative agent of a dermatitis.

CONGENITAL SYPHILIS AND JUVENILE DEMENTIA PARALYTICA

To the Editor:—I have a boy, aged 9 years, under my care for the treatment of congenital syphilis. He has a 4 plus Wassermann reaction of both the blood and the spinal fluid. For the past year he has been treated with bismuth salicylate (1 grain, 0.065 Gm.) intramuscularly at weekly intervals for periods of from six to eight weeks, alternated with intravenous injections of neoarsphenamine, in a dosage from 0.2 to 0.3 Gm., every week for eight injections, with rest periods of two or three weeks between the series. Following one series of five injections of bismuth salicylate symptoms developed referable to the central nervous system and resembling those of meningeal irritation. The spinal fluid at this time was 4 plus with no evidence of any other infecting agent. He also has a congenital cataract of the left eye. Otherwise he is in fair health, and the physical examination reveals no other gross pathologic change. His average weight is 65 pounds (29.5 Kg.). I should appreciate an outline of treatment in this case. Please omit name.

M.D., New York.

ANSWER.—Although other details of the spinal fluid examination than the Wassermann reaction are not supplied, the fact that the spinal fluid Wassermann is strongly positive in a boy of 9 who has no clinical evidence of neurosyphilis leads one to anticipate the possibility of the subsequent development of juvenile dementia paralytica. Treatment with the arsphenamines and heavy metals (bismuth and mercury) would probably not prevent this eventuality, no matter how long treatment was prolonged. Recent experience has shown that fever therapy is applicable to the treatment of juvenile neurosyphilis as well as to central nervous system involvement in the acquired disease. The most favorable type of case for its use is in preparetic asymptomatic neurosyphilis. This is the probable situation that confronts the correspondent in this case.

It is generally agreed that, of the various methods of producing artificial fever, malaria is by far the most satisfactory,

both in increased incidence of serologic improvement and in the maintenance of good health (e. g., prolonged remissions in dementia paralytica) over long periods. It is suggested, therefore, that this patient be treated with induced malaria. This form of fever therapy should not be given except by a physician who is experienced in its use. After eight to twelve paroxysms of fever have been completed and the malaria terminated by the use of quinine, a short course of six injections of 0.3 Gm. of neoarsphenamine at weekly intervals should be given for its combined tonic and antimalarial effect. Immediately on completion of this course, treatment should be started with tryparsamide, which is particularly valuable in neurosyphilis, both congenital and acquired. The average intravenous dose of tryparsamide for a boy of this age and weight would be 1.5 Gm. Weekly injections should be given to a total of from twelve to sixteen injections to the course, each course being separated by an eight or ten weeks course of injections of bismuth salicylate, 0.1 Gm. No rest periods should be allowed. This form of alternating treatment with tryparsamide and bismuth salicylate should be continued for at least two years after the completion of the malaria and should be controlled by periodic physical examinations and serologic tests of the blood and spinal fluid, carried out at intervals of six months.

Visual damage from tryparsamide need not be a more serious problem in a boy of 9 who is able to cooperate with descriptions of subjective visual sensations than in the adult. The presence of a congenital unilateral cataract is not a contraindication to the use of this drug.

On completion of this outline of treatment the patient should be followed with subsequently repeated physical and laboratory examinations in order to guard against possible progression. Such examinations should be carried out every six months for the first three years and thereafter yearly or biannually for the next fifteen to twenty years.

PROPHYLAXIS OF RINGWORM OF FEET

To the Editor:—Where large bodies of men use the same shower baths, what prophylactic measures are considered best for the prevention of trichophytic infection of the feet? Bathrooms in barracks have glazed tile floors and walls. I have been using foot tubs containing antiseptic solution for men to step into before entering and after leaving shower baths. The tile floors are scrubbed thoroughly each day. Formerly wooden gratings were used under showers for men to stand on, sufficient gratings being furnished to allow for sunning on alternate days, weather permitting. What is the consensus as to the use of wooden gratings? Please omit name.

M.D., Virginia.

Answer.—The use of 1 per cent sodium hypochlorite solution in foot baths or "wells" built into the floor has been shown to be efficient as prophylaxis in ringworm of the feet. It is also cheap. The sodium hypochlorite can be purchased from a number of chemical companies in steel carboys in a strength of 20 per cent. The solution in the pans should be changed every second day. The pans or "wells" are so places as to necessitate all the men walking through the solution on their way to the shower baths and also just prior to putting on their clothes. A complete description of this method of prophylaxis has been given by:

Osborne, E. D., and Hitchcock, Blanche S.: The Prophylaxis of Ringworm of the Feet, The Journal, August 15, 1931, p. 453.
Osborne, E. D.; Putnam, E. D., and Rickloff, R. J.: Personal Experiences in the Prophylaxis and Treatment of Ringworm of the Hands and Feet, *New York State J. Med.*, Nov. 1, 1933.

Wooden gratings are of doubtful benefit, especially if the method of prophylaxis as outlined is used.

TYPHOID FEVER CARRIERS

To the Editor:—As part of a study I am making of a specific phase of typhoid fever control, I am confronted with a number of technical questions and have been unsuccessful in finding the required information. To check the dangers resulting from typhoid carriers, some medical authorities advise the removal of the gallbladder. 1. Why does Bacillus typhosus settle and propagate in the gallbladder and in what way do surgical measures correct these conditions? 2. What states, if any, legally require that the gallbladder must be removed to cure a chronic carrier? 3. Why are most of the carriers women? Whatever information you may be able to supply will be greatly appreciated, and acknowledgment will be made as to the source of the data. Should you know of some published material that may give the required information, references to available material would be of great assistance to me in making this study.

N. N. Wolfert, New York.

Answer.—1. Presumably typhoid bacilli are found in the gallbladder during the acute stages of the disease as well as being widely distributed elsewhere in the intestinal tract. It has been suggested that in gallbladder typhoid carriers the reason the organisms persist is that the gallbladder was diseased prior to the typhoid infection. An analogy has been drawn with the almost universal frequency with which a pathologic condition of the nasal aural pharynx is found in cases of chronic diphtheria carriers.

2. So far as we know, no state requires removal of the gallbladder in chronic carriers, and it would probably be undesirable to make such removal compulsory. Some state health departments encourage it and in Massachusetts, for instance, the cost of removal is borne by the state, when the person is a food handler. However, prior to operation, it is important:

(*a*) To have at least a year elapse after the disease in order to make sure that the carrier condition will not clear up spontaneously.

(*b*) To obtain a specimen of bile in order to make sure that the carrier's condition is located in the biliary tract.

(*c*) To make sure that the general condition of the patient is good.

3. There is some doubt as to the accuracy of the observations that more women are carriers than men. This fallacy has probably arisen from the fact that the typhoid carriers are usually detected in connection with food outbreaks, and women are more frequently food handlers than men.

The following references may be of interest:

Bigelow, G. H., and Anderson, G. W.: Cure of Typhoid Carriers, The Journal, July 29, 1933, p. 348.
Senftner, H. F., and Coughlin, F. E.: Typhoid Carriers in New York State, with Special Reference to Gallbladder Operations, *Am. J. Hyg.* **17**:711 (May) 1933.

TREATMENT OF SECONDARY ANEMIA

To the Editor:—Will you please enlighten me as to the following: What definite results may be expected in cases of uncomplicated secondary anemia with the use of copper, iron and other advertised tonics?

M.D., New York.

Answer.—Uncomplicated secondary anemia is taken to imply a hypochromic anemia not dependent on such conditions as infection, cancer, chemical poisons, nephritis, cirrhosis of the liver or leukemia. Complications such as infection or severe damage to vital organs are conditions that may inhibit the effectiveness of iron in hypochromic anemia. Uncomplicated hypochromic anemia of the idiopathic type associated with gastric achlorhydria, hypochromic anemia attributable to defective nutrition and chronic blood loss are promptly alleviated by adequate amounts of inorganic iron, as, for example, by the daily administration by mouth of 6 Gm. of iron and ammonium citrate, 4 Gm. of ferrous carbonate or 2 Gm. of reduced iron. Defective nutrition leading to hypochromic anemia may arise from deficient diets—common in children and women—from improper absorption from the gastro-intestinal tract and, perhaps, from dysfunction in the utilization of iron and blood-building substances. Improper absorption may be dependent on numerous factors, such as diarrhea and gastric achlorhydria; the latter condition, together with deficient diets, is often etiologic in the hypochromic anemia of pregnancy.

The addition of copper to therapeutic preparations of iron has not been shown to be of significant value in the anemias of adults alleviated by iron therapy. It has been shown that in young children the addition of small amounts of copper to therapeutic iron preparations in some cases may accelerate the rate of hemoglobin formation, but it is the iron preparation, not the additional copper, that is the essential drug for cure. As for "other advertised tonics," the list is a long one; but iron in adequate doses remains the sine qua non for uncomplicated hypochromic anemia. The Council on Pharmacy and Chemistry has stated that a search of the literature fails to reveal that, in man, the addition of copper to iron is of any therapeutic advantage. In view of the lack of specific evidence of the value, in man, of combinations of copper and iron, the Council has not accepted combinations containing copper and iron.

COMBINED SYPHILIS AND TUBERCULOSIS

To the Editor:—What is reputed to be the effects, good, bad or indifferent, of active antisyphilitic treatment in the face of a tuberculosis, if the latter is (*a*) active, (*b*) quiescent or (*c*) arrested?

Reuben Hoffman, M.D., Henryton, Md.

Answer.—Infection of a person with both tuberculosis and syphilis is thought by some to exert a good influence on the course of both diseases, causing them to run a milder course than if they were uncomplicated. The measures used in the treatment of pulmonary tuberculosis would not be likely to alter this; but antisyphilitic treatment, except of the mildest kind, is apt to affect tuberculosis unfavorably, even, in some

cases, bringing on a rapidly fatal miliary dissemination. Syphilis is a slow disease, while pulmonary tuberculosis may rapidly destroy life. Therefore, unless the syphilitic infection is so recent that it is actively contagious, its importance must be rated as slight compared to that of an active tuberculosis.

Iodine holds its place among antisyphilitics because of its power to dissolve inflammatory infiltrates. This action, however useful it may be in the treatment of syphilis, is directly antagonistic to the walling off process, on which the cure of pulmonary tuberculosis depends. It is claimed by some that mercury and bismuth compounds and the arsphenamines exert a milder action of the same sort. Whether this is true or not, it is well known that mercury and bismuth compounds, when given too vigorously, lessen resistance. Some forms of arsphenamine are said to lessen coagulability of the blood and thereby predispose to hemorrhage. The febrile reactions caused by arsphenamine are damaging to the phthisis patient. Fever therapy, useful in dementia paralytica and in resistant syphilis in general, is so dangerous in the presence of pulmonary tuberculosis that it is contraindicated except in dementia paralytica that yields to no other treatment, in which the physician feels that the risk is justified.

Active tuberculosis complicated with an old syphilis should be treated as if there were no syphilis present. If it is thought that the syphilis is recent and still contagious, mild treatment with mercury or bismuth compounds may be given, kissing and sexual relations prohibited, and the nurse's hands protected by rubber gloves whenever there is a possibility of contamination by moist secretions of the patient. Arsphenamine of any kind should not be used during the febrile stage of tuberculosis. J. E. Moore, discussing the question of the treatment of syphilis in the presence of active pulmonary tuberculosis, confesses "wholesome respect for the danger" (The Modern Treatment of Syphilis, Springfield, Ill., Charles C. Thomas, 1933, p. 214).

When the tuberculosis is quiescent, a course of mercury or bismuth compounds in about half the usual dose may be given. This will prevent a possible Jarisch-Herxheimer reaction. After a short rest a course of neoarsphenamine in doses of from 0.15 to 0.45 Gm. intravenously every fifth day may be tried. In addition to questioning the patient about any illness or distress following the previous injection, and examining the urine for albumin and casts and the skin of the patient for any itching eruption, one should take the patient's temperature before each injection and none should be given if it is above normal. The course of neoarsphenamine should be followed immediately by a course of mercury or bismuth compounds. After this a rest period should be allowed. Combined courses of mercury or bismuth compounds with neoarsphenamine are not advisable.

Arrested tuberculosis is not a contraindication for antisyphilitic treatment, except that iodine should be avoided or used only with great caution in cases of fibroid tuberculosis. The patient should be regarded as having decreased resistance. The cardinal principle of the treatment of syphilis is that the treatment must stimulate, not depress, the patient's resistance. All drugs should be given in moderate dosage.

Tuberculosis of the suprarenal gland is a definite contraindication to the use of arsphenamine. Tuberculous involvement of the kidneys or liver may render antisyphilitic treatment very difficult. Lymph gland tuberculosis permits fairly active treatment of syphilis. Schamberg and Wright mention the frequent occurrence in Negroes of large glands that diminish to some extent under antisyphilitic treatment but do not subside entirely (The Treatment of Syphilis, New York, D. Appleton & Co., 1932, p. 600).

Skin tuberculosis, at least lupus vulgaris, tuberculosis verrucosa cutis and the tuberculides, often improve on the moderate use of mercury or bismuth compounds or neoarsphenamine. The therapeutic test is therefore of little value to differentiate them from the syphilis.

FUNCTIONAL TEST OF EFFICIENCY OF CIRCULATION

To the Editor:—In Queries and Minor Notes in THE JOURNAL, June 6, 1931, the injection of saline solution intracutaneously for determining the efficiency of the circulation was described. I should like to have the explanation of why the wheals disappear more rapidly in the area where the circulation is poor or below the point of rupture or obstruction. Kindly omit name and address.

M.D., District of Columbia.

ANSWER.—It is well known that, when the circulation to an extremity is diminished, deficient or suddenly cut off there develops an anoxemia in the affected part, producing an increase of salt concentration together with a relative increase in acidity. These two factors greatly increase absorbability of injected fluids, especially water and saline solution. For this reason it is apparent that an intracutaneous injection of physiologic solution of sodium chloride into wheals will be absorbed rapidly, depending on the degree of circulatory impairment. The normal absorption rate should be between forty and sixty minutes. In certain circulatory disturbances, especially thrombo-angiitis obliterans, the rate of absorption may be as rapid as five or six minutes, and in sudden vascular occlusion or rupture of a large artery the disappearance of the wheal is likewise rapid.

FOUL BREATH

To the Editor:—Because of the fact that (1) hyperacetonemia as in diabetic acidosis produces an acetone breath, (2) hyperuremia as in uremia produces a "urea breath," and (3) hyperalcoholemia produces an alcoholic breath, the following questions have occurred to me that you may be able to answer: 1. Is it possible that many of the cases of so-called halitosis exist because of certain foul-smelling substances accumulating in the blood that are volatile and of unknown chemical composition? 2. Has any one thus far been able to elaborate any apparatus by which the degree of odor can be measured? Is there any such thing as an "odorometer" that could be used to correlate the degree of odor to the breath with the extent of such similar offending odors or volatile substances in the blood? 3. It has been my experience that many cases difficult to diagnose, many cases included in the classifications of psychoneuroses, hysteria, epilepsy and neurasthenia or those generally presenting bizarre or physically unexplainable symptoms frequently show an offensive halitosis as the only outstanding objective sign. Most of these cases have been treated for this symptom unsuccessfully in the blood, which in turn explains the foul breath? 4. Has there been mentioned in the literature of epilepsy that the foulness of the breath runs parallel to the attacks? I would appreciate the answers to these questions and also your opinion as to whether or not this question is one that can be studied under present-day laboratory facilities and whether in your opinion the theory is a feasible one or was it thrown by the wayside years ago by ancient clinicians?

WALTER M. BARTLETT, M.D., Greenwich, Conn.

ANSWER.—It must be conceded that there are patients whose breath does have an unpleasant odor yet whose examination fails to reveal a good explanation. It may be possible, as suggested in question 1 and 3, that this is due to the presence in the expired air of volatile chemical compounds as yet unidentified. Chemists in the perfume industry make use of an apparatus for measuring odors. Possibly such an apparatus could be modified and utilized for study of the odors of the breath, and such a study might provide some interesting results.

The foul breath of the epileptic patient has been referred to in the literature, but it does not appear that definite conclusions can be reached as to a relationship between the foulness of the breath and the occurrence of attacks.

CORNEAL ULCERS

To the Editor:—A boy, aged 9 years, has had repeated corneal ulcers since the age of 18 months. The attending ophthalmologist tells me that the ulcers are always superficial, never leave any opacity, and always heal in from ten days to two weeks. The child has never gone more than six months without some eye trouble of this kind. The mother tells me that the child's eyes are always worse in the spring. Even while the eyes are normal, strong light seems to hurt them. The child has also a refractive error, which has been corrected. He has complained some of headache in the past six months. He has been on a good diet, taking cod liver oil, and has a nap every day. His habits are good. There is a history of tuberculosis in the grandfather and grandmother, both dying from this cause, but no exposure. He has had fair general health. He was a full term baby, normal at birth, and the delivery was normal. He had measles at 7 years of age, whooping cough at 3 and chickenpox at 2. His tonsils and adenoids were removed at 5 years of age. His developmental history is normal. His father and mother are both living and well. He has a sister, aged 8, living and well. His physical examination is essentially negative except for carious teeth. His weight is 40 pounds (18 Kg.) and he is 44½ inches (112 cm.) tall. Examination of the urine is negative. The Wassermann reaction is negative. Tuberculin reactions (intradermal) have been repeatedly negative in dilutions of from 0.1 to 1.0 mg. The blood count reveals red blood cells 4,120,000 and hemoglobin 88 per cent. He is alert, bright and cooperative but is in only the first grade of school, he has been out so much. I should like to have some suggestion as to the etiology of this condition. I forgot to mention that all sinuses are negative to roentgen examination by a competent man. I should also like some references on the recurrent type of corneal ulcer as seen in the child, preferring pediatric literature rather than from the standpoint of the eye, ear, nose and throat man, because I am interested chiefly in the etiology of this condition.

M. C. CARLISLE, M.D., Waco, Texas.

ANSWER.—A great diversity of opinion exists as to the etiology of recurring corneal ulcers in infancy and childhood. The condition is most commonly observed between the ages of 2 and 12 years. Infants and children who have repeated cor-

neal ulcers are also frequently affected with rhinitis, eczema of the scalp and face, hypertrophied tonsils and adenoids and general glandular enlargement. Many manifest the symptoms of the exudative diathesis, as described by Czerny. Early pathologic changes are to be found in the superficial layers of the substantia propria, before the epithelium and Bowman's membrane are affected. The epithelium is soon found to be raised from Bowman's membrane, and leukocytes, some lymphocytes and fixed corneal cells are found between the layers of the cornea nearest the ulcer. The symptoms of intense photophobia blepharospasm and profuse lacrimation are not proportionate to the corneal involvement.

Some authors believe that the disorder is on a neuropathic basis, induced by autointoxication. Not all individuals are equally susceptible, those having a scrofulous, exudative or lymphatic diathesis being most liable to show the condition. Others believe that the lowering of body resistance following infectious diseases, chronic illness and malnutrition is the predisposing factor. Most of the children reported suffering with this condition have been well nourished. The affliction has been associated with acne rosacea in adults, though this is rare in children.

The preponderance of opinion seems to base the occurrence of the ulcers on a tuberculous etiology. Whether due to the tubercle bacilli, to their toxins, or to other causes has not been established. The tuberculin skin reactions are strongly positive in as high as 90 per cent of infants and children having corneal ulcers. Those who consider the disease a manifestation of hypersensitiveness of the patient to tuberculin recommend a desensitization of these children as a therapeutic measure.

The fact that the mother states that the condition is always worse in the spring might lead one to think of a vernal catarrh. This disease is chiefly a disturbance of the conjunctiva characterized by pale elevations, especially on the conjunctiva of the lid. The process rarely involves the cornea, though in severe cases ulcers may occur and produce opacities. This condition is more to be differentiated from trachoma than from phlyctenular conjunctivitus or keratitis. Vernal catarrh may recur each spring for years, and it eventually disappears.

The following references are suggested:

Wood, C. A.: Ocular Diseases of Infancy and Childhood, in Abt's Pediatrics, Philadelphia, W. B. Saunders Company, 1926, vol. VIII, chapter CXC, p. 315.

Gilbert, W.: Augenerkrankangen im Kindesalter, in Praundler and Schlossman's Handbuch der Kinderheilkunde, Leipzig, F. C. W. Vogel, 1921, vol. 6.

Ginestous, Etienne: Ophthalmologie infantile, Paris, Octavo Doin, 1922.

Heine, L.: Die Krankheiten des Auges, Berlin, Julius Springer, 1921.

Casparis, Horton: Phlyctenular Keratoconjunctivitis, *Am. J. Dis. Child.* 34:779 (Nov.) 1927.

INCUBATION PERIOD AND TREATMENT OF GONORRHEA

To the Editor:—What is the outside period of incubation in gonorrhea and in syphilis? What is the usual time, under reasonably good treatment, for the cure of an acute case of gonorrhea in a girl of 19? Please omit name.

M.D., California.

ANSWER.—The period of incubation of gonorrhea is seldom over a week, although a female patient may not be distressed by symptoms until more time has elapsed. In fact, some patients with rather marked infection are comfortable throughout. In practice, if infection is not evident by the eighth day on pelvic examination there is small likelihood of the trouble appearing at a later date.

Although, theoretically, syphilis has been said to have a possible period of incubation of as much as three months, a person who develops no lesions within four or five weeks is relatively safe.

Acute gonorrhea of the external genitalia should under average conditions cause no discomfort after three or four weeks. A latent infection, with a possibility of transmission on sexual intercourse, usually persists for some months.

RESISTANT URTICARIA

To the Editor:—A query by M.D., Washington (THE JOURNAL, April 21, p. 1325), asking for information regarding resistant urticaria, interested me because of many similar cases in my practice. There is found in every one of the resistant cases a very low response to the Van Slyke test, some of them as low as 32. The patients all recovered after the figure had been raised above 65. The extreme acidity of the blood was evidently the exciting cause in these cases. To raise the alkaline content of the blood by the administration of alkalis brings only transient relief. When raised by diet, the result is permanent. This information is offered for what it may be worth.

J. F. YARBROUGH, M.D., Montgomery, Ala.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALABAMA: Montgomery, July 10-13. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

AMERICAN BOARD OF OPHTHALMOLOGY: Butte, Mont., July 17. Sec., Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.

ARIZONA: *Basic Science.* Tucson, June 19. Sec., Board of Basic Examiners, Dr. Robert L. Nugent, University of Arizona, Tucson. *Medical.* Phoenix, July 3. Sec., Dr. J. H. Patterson, 320 Security Bldg., Phoenix.

CALIFORNIA: San Francisco, July 9-12, and Los Angeles, July 23-26. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, July 3-6. Sec., Dr. Wm. Whitridge Williams, 422 State Office Bldg., Denver.

CONNECTICUT: *Regular.* Hartford, July 10-11. *Endorsement.* Hartford, July 24. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. *Homeopathic.* New Haven, July 10. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: *Basic Science.* Washington, June 25-26. *Medical.* Washington, July 9-10. Sec., Commission on Licensure, Dr. W. C. Fowler, 203 District Bldg., Washington.

ILLINOIS: Chicago, June 26-29. Supt. of Regis., Dept. of Regis. and Edu., Mr. Eugene R. Schwartz, Springfield.

INDIANA: Indianapolis, June 19-21. Sec., Board of Medical Registration and Examination, Dr. William R. Davidson, Room 5, State House Annex, Indianapolis.

KANSAS: Topeka, June 19-20. Sec., Board of Medical Registration and Examination, Dr. C. H. Ewing, Larned.

MAINE: Augusta, July 5-6. Sec., Board of Regis. of Medicine, Dr. Adam P. Leighton Jr., 192 State St., Portland.

MARYLAND: Baltimore, June 19-22. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore.

MASSACHUSETTS: Boston, July 10-12. Sec., Board of Regis. in Medicine, Dr. Stephen Rushmore, 144 State House, Boston.

MINNESOTA: Minneapolis, June 19-21. Sec., Dr. E. J. Engberg, 350 St. Peter St., St. Paul.

MISSISSIPPI: Jackson, June 26-27. Sec., State Board of Health, Dr. Felix J. Underwood, Jackson.

NATIONAL BOARD OF MEDICAL EXAMINERS: The examinations in Parts I and II will be held at centers in the United States where there are five or more candidates, June 25-27 and Sept. 12-14. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEW JERSEY: Trenton, June 19-20. Sec., Dr. James J. McGuire, 28 W. State St., Trenton.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 25-28. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, Room 315 Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 18. Sec., Dr. B. J. Lawrence, 503 Professional Bldg., Raleigh.

NORTH DAKOTA: Grand Forks, July 3-6. Sec., Dr. G. M. Williamson, 4½ S. 3d St., Grand Forks.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 10-14. Sec., Board of Medical Education and Licensure, Mr. W. M. Denison, 400 Education Bldg., Harrisburg.

RHODE ISLAND: Providence, July 5-6. Dir., Public Health Commission, Dr. Lester A. Round, 319 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. Earle Booser, 505 Saluda Ave., Columbia.

SOUTH DAKOTA: Rapid City, July 17-18. Dir., Division of Medical Licensure, Dr. Park B. Jenkins, Pierre.

TEXAS: Fort Worth, June 21-23. Sec., Dr. T. J. Crowe, 918-19-20 Mercantile Bank Bldg., Dallas.

UTAH: Salt Lake City, June 27-29. Dir., Department of Registration, Mr. S. W. Golding, 326 State Capitol Bldg., Salt Lake City.

VERMONT: Burlington, June 20-22. Sec., Board of Medical Registration, Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 20-22. Sec., Dr. J. W. Preston, 28½ Franklin Road, Roanoke.

WASHINGTON: *Basic Science.* Seattle, July 16-17. *Medical.* Seattle, July 19-21. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.

WEST VIRGINIA: Wheeling, July 9. State Health Commissioner, Dr. Arthur E. McClue, Charleston.

WISCONSIN: Milwaukee, June 26-29. Sec., Dr. Robert E. Flynn, 401 Main St., LaCrosse.

Illinois January Examination

Mr. Eugene R. Schwartz, superintendent of registration, Illinois Department of Registration and Education, reports the written examination held in Chicago, Jan. 23-25, 1934. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Fifty-four candidates were examined, 47 of whom passed and 7 failed. The following schools were represented:

School	PASSED Year Grad.	Per Cent
Howard University College of Medicine	(1932)	76
Chicago Medical School	(1933) 86,* (1934)	82, 85
Loyola University School of Medicine	(1933)	79,* 86*
Northwestern University Medical School	(1933)	82, 82,* 84,* 84,* 86,* 87†
Rush Medical College	(1931)	80,
	(1933) 78, 79, 79, 81, 83, 85, 85, 87, 87	
School of Med. of the Div. of the Biological Sciences	(1933)	81, 85

University of Illinois College of Medicine	(1933)	78, 78,* 81, 82,* 83,* 84,* 85, 86, 86,* 87, (1934) 82, 84, 88
Tulane University of Louisiana School of Medicine	(1921)	83
Harvard University Medical School	(1921) 76, (1931)	85
University of Minnesota Medical School	(1930)	86
University of Wisconsin Medical School	(1929)	80
University of Manitoba Faculty of Medicine	(1930) 81, (1933)	82
University of Western Ontario Medical School	(1929)	83
Friedrich-Wilhelms-Universität Medizinische Fakultat, Berlin, Prussia, Germany	(1933)	76*‡
Ludwig-Maximilians-Universität Medizinische Fakultät, München, Bavaria, Germany	(1924)	81*‡

FAILED

School	Year Grad.	Per Cent
Chicago Medical School	(1932) 70, 71, (1933)	73
Loyola University School of Medicine	(1933)	74
University of Illinois College of Medicine	(1933)	77‖
Friedrich-Wilhelms-Universität Medizinische Fakultat, Berlin, Prussia, Germany	(1929)	69‡
Universitatea Regele Ferdinand I-iu din Cluj Facultatea de Medicină si Farmacie	(1927)	58‡

* License withheld for certificate fee.
† This applicant has received an M.B. degree and will receive an M.D. degree on completion of internship. License withheld.
‡ Verification of graduation in process.
‖ Grades below 60 per cent.

Oregon Reciprocity Report

Dr. Joseph F. Wood, secretary, Oregon State Board of Medical Examiners, reports 2 physicians licensed by reciprocity at the meeting held in Portland, Jan. 2, 1934. The following schools were represented:

LICENSED BY RECIPROCITY

School	Year Grad.	Reciprocity with
Creighton University School of Medicine	(1932)	Kansas
University of Oregon Medical School	(1929)	California

Book Notices

Human Embryology and Morphology. By Sir Arthur Keith, M.D., F.R.S., LL.D., Master of the Buckston Browne Research Farm. Fifth edition. Cloth. Price, $10. Pp. 558, with 535 illustrations. Baltimore: William Wood & Company, 1933.

As the title indicates, this book reviews the evolution of man from the embryologic and comparative anatomic aspects. In the preface the author says "Throughout the text I have striven to keep in mind that I am writing, not for professional embryologists and anatomists, but for men who are to be practical physicians and surgeons." In the first edition (1901) he kept as closely as possible to what is essential for the understanding of human anatomy and fully capitalized the teratologic evidence. The pleasing style of the original lectures has been preserved as in succeeding editions the field has been more completely covered. The present edition exceeds the fourth by about 13 per cent; the chief additions are new illustrations, a chapter on experimental embryology, and "notes" that call attention to recent work and give literature references. The illustrations are for the most part diagrams such as a clever draftsman could draw on a blackboard. They have the inaccuracies of such sketches and in some cases in which the illustrations have been copied there are errors inexcusable in a published work. To any one who has embryologic material to study they are wholly inadequate; however, the book was written for students who have no opportunities for laboratory work. Many of the original diagrams are packed with information and are highly illuminating. The adult anatomy of certain organs such as the brain, the intestine and the urogenital apparatus can be understood only in the light of their developmental history. These are presented in especial detail. More space is devoted to the nervous system than to general embryology and early development together, and the account is clear and particularly helpful for an understanding of the anatomy of the brain. The value of the comparative point of view is abundantly demonstrated. There is a good account of the development of the mesenteries and of other peritoneal relations. While theoretical considerations such as those concerning the metamerism of the head and limbs are not accepted by all morphologists, they are supported by evidence, they help the student to understand complex relations, and they are accordingly justified in a textbook. The index is adequate, the typography excellent.

Die Toneuhrankheiten des Herzens und der Gefässe: Ihre Biologie und Therapie. Von Prof. Dr. J. Pal. Paper. Price, 18 marks. Pp. 228, with 20 illustrations. Vienna: Julius Springer, 1934.

This monograph on the disturbances of vascular tension is by one of the best known continental contributors to the literature on this subject. Throughout the discussion a credible attempt is made to keep the physiologic mechanisms and processes constantly correlated with the clinical phenomena. A clear and concise review of the biologic aspects of muscle tonus is followed by a far fuller consideration of the normal and pathologic biology of the heart, arteries and capillaries. More than half of the monograph is devoted to the clinical disturbances of vascular tension: hypertensive disease and hypotension. The discussion of the etiology and pathogenesis of hypertensive disease is unfortunately inadequate. There is no consideration of the newer American work on these fascinating and vitally important aspects of the problem. Pal considers generalized hypertension to be of toxogenic origin; the emotional, constitutional and hereditary factors are given but scant attention. There is an attempt to distinguish between "primary hypertension" and "toxogenic hypertension," particularly in considering the effects of hypertensive disease on the kidneys; such divisions are arbitrary and tend to confuse rather than clarify the issue. Though the illustrations are not numerous, they are carefully chosen and well executed. Of especial value are several fine photomicrographs showing arterial changes. The thoracic roentgenograms intending to illustrate changes in cardiac contour and size appear to be less wisely chosen, for several are exaggerated examples. The bibliography is almost wholly continental, particularly German and Austrian. There is an unfortunate lack of appreciation of the significant advances made elsewhere; for example, the discussion on angina pectoris includes no mention of the work of Sir Thomas Lewis and many others on myocardial ischemia or histanoxia. In many respects the monograph is a review of the author's previously reported work, with fully three pages of the bibliography devoted to his own publications. Reference to American literature is almost wholly lacking. The book is printed on good quality paper, but the paper cover is of the flimsiest grade. The book has its greatest value as a review of the work and views of the author, who has contributed much that is important in the development of knowledge concerning that dread triad cardiovascular-renal disease. The monograph should be of considerable interest to those who are making a special study of these problems, although it contains little that has not already been published. Students and physicians without special interests in this field will find ample material and ideas in the several American monographs on the subject.

The Queen Charlotte's Text-Book of Obstetrics. By the Following Members of the Staff of the Hospital: Aleck W. Bourne, M.B., F.R.C.S., F.C.O.G., Obstetric Surgeon to Out-patients, St. Mary's Hospital, Trevor B. Davies, M.D., F.R.C.S., F.C.O.G., Gynaecological Surgeons, Hospital for Women, Soho, L. Carnac Rivett, M.C., F.R.C.S., M.C.O.G., Surgeon, Chelsea Hospital for Women, L. G. Phillips, M.S., F.R.C.S., M.C.O.G., Assistant Surgeon, Hospital for Women, Soho, C. S. Lane-Roberts, M.S., F.R.C.S., M.C.O.G., Obstetric Surgeon, Royal Northern Hospital, and Leslie H. Williams, M.D., M.S., F.R.C.S., Obstetric Surgeon to Out-patients, St. Mary's Hospital. Third edition. Cloth. Price, $6. Pp. 679, with 301 illustrations. Baltimore: William Wood & Company, 1934.

The first two editions of this book (1927 and 1930) bore the title "The Queen Charlotte's Practice of Obstetrics." In the present edition Leslie Williams has replaced J. B. Banister as one of the six authors. In general, the book is almost identical with the previous two editions except for the addition of a few new illustrations and revisions of a few chapters. The opening of an isolation block in 1930 for cases of puerperal infection has afforded the authors a wealth of experience in the diagnosis, care and treatment of this disease. In spite of the added experience it is still the practice at Queen Charlotte's Hospital to evacuate the uterus in cases of febrile abortion and in some instances to instil glycerin into the uterine cavity. Likewise in cases of puerperal sepsis with blood stream infections, the authors recommend instillation of glycerin into the uterus or uterine irrigations. Eclampsia is treated conservatively, but veratrone is advocated for the reduction of blood pressure. This drug usually produces a sharp drop in the blood pressure but at best this is temporary and it may prove harmful. In the treatment of placenta praevia the authors follow the present

general trend of performing a cesarean section for a certain number of these cases. They encountered no maternal death in their series of forty-nine cesarean sections for this complication. In the first edition the authors reported a series of fifty-four cesarean sections with three deaths (5.5 per cent). For the induction of labor by rupture of the membranes the statement is made that an anesthetic is usually required for primiparas, but this is contrary to general experience. The authors still prefer the classic cesarean section, as evidenced by the fact that they devote nine and a half pages to the description of this operation and only half a page to the cervical cesarean section. Even in 1934 the authors still quote Kerr and Holland's 1921 figures to show a mortality of 7 per cent for 4,160 classic operations and a death rate of 15 per cent for thirty-three cases of lower segment operations performed in the British Isles. The high death rate for the thirty-three low operations is undoubtedly due to the fact that these were the first few operations performed by British operators, who were slow to take up this operation (except Munro Kerr). The authors should compare their series of classic operations with the report by Greenhill (*Am. J. Obst. & Gynec.* **19**:613 [May] 1930) for the Chicago Lying-in Hospital's 874 low, cervical operations, with a maternal mortality rate of 1.26 per cent. In spite of the fact that in the review of the first edition (THE JOURNAL, Sept. 24, 1927, p. 1084) attention was called to a number of De Lee's illustrations that were copied without mention being made of the source, the same illustrations appear in the present edition with no indication of their origin. The appearance of the third edition testifies that the book is undoubtedly popular in the British Isles.

Patogenesi e terapia della sindrome di Morgagni-Adams-Stokes. Dal Prof. Luigi Condorelli, aiuto della II clinica medica della r. Università di Napoli. Paper. Price, 35 lire. Pp. 107, with 59 illustrations. Naples: V. Idelson, 1933.

Expressing the hope that the work may be of use to general practitioners as well as to cardiologists, the author introduces this small volume by reminding physicians that the treatment of heart block is frequently groping; for a drug valuable to one patient with the Adams-Stokes syndrome may be dangerous to another, since the pathogenesis of the syncopal attacks is notoriously diverse from subject to subject, and even from time to time in the same individual. The discussion of pathogenesis occupies seventy-four of the eighty-one pages of the text. By abundant reference to literature and analysis of much of the author's own clinical and graphic material, the modern concepts of the pathogenesis of the syndrome are clearly told. Adams-Stokes attacks occurring during partial heart block and those during complete auriculoventricular dissociation are considered separately. In the section on complete heart block, the author reports one example of a hitherto undescribed type of peculiar, recurrent, ventricular fibrillation and gives full clinical and pathologic details. The part of the book devoted to treatment is small, but the suggestions are succinctly put and well worth attention. As a prelude to treatment, a series of functional and pharmacologic tests is advised for the purpose of establishing the pathogenesis of the attacks. Because electrocardiographic examination is foremost among these preliminaries, it might be inferred that Adams-Stokes attacks can perhaps be properly treated only by those practitioners who have such mechanical aids constantly at their disposal. That the author is himself equipped to gather and analyze important data by less complicated means is quite evident. The detailed instructions for treating paroxysms of ventricular fibrillation and associated syncope, for example, are particularly practical and surprisingly optimistic in view of the hopeless prognosis so universally assigned the condition. The less sensational but more common disturbances of conduction, and their treatment by atropine, epinephrine, digitalis, barium chloride, the purine bases, stimulants, sedatives and other measures are also outlined. One realizes with a feeling of regret that the language in which it is written will prevent the wide dissemination which this monograph deserves. It is a logical sequel to the author's recent "Die Ernährung des Herzens und die Folgen ihrer Störung" (Dresden and Leipzig, Theodore Steinkopff, 1932) and as such will be missed by those without a knowledge of Italian. We are, at least, indebted to the latter tongue for the paradox of a language, unable to render the equivalent of "reizbildung" or "kupplung" but offering, with inimitable onomatopoeia, a description of the auscultatory signs of ventricular fibrillation in which we are told that the sound is "come un fruscio di ali." There is an index to subject matter and to authors. The bibliography, listing 211 works, is purposely limited to those actually cited in the text.

13 let nauchnoy meditsiny na Severnom Kavkaze, 1920-1933. Otvetstvenny redaktor I. L. Benkovich. [Thirteen Years of Scientific Medicine in North Caucasus.] Cloth. Pp. 244, with illustrations. Rostov-na-Don: Izdatelstvo "Severny Kavkaz," 1934.

The volume is the official publication of the Scientific Medical Soviet of North Caucasus. It embraces the accomplishments of the scientific and medical activity for the period between 1920 and 1933. In the introductory statement by the secretary of the organization one learns that North Caucasus, constituting under the czars one of the backward, neglected and oppressed "foreign territories," has been converted under the new régime into a flowering spot of culture and science. Combining as it does about a hundred related nationalities, it has become one of the frontier strongholds of the soviet union. The scientific and investigative work of the newly developed network of scientific institutes (twenty-two in all) was directed by the party and the government toward the solution of definite problems. A single plan of research to constitute an organic part of the entire plan of soviet Russia was worked out. The possibility of planned scientific work within the conditions of socialist reconstruction has been answered in the positive. Its advantages are the avoidance of overlapping, the focusing of attention on the problems of the leading industries, and obligatory attention to the specific problems of a given territory and the various nationalities residing there. The volume contains twenty-four papers dealing with original research and studies in the various branches of scientific and practical medicine. Endogenous diseases of this cattle grazing country, such as echinococcosis and brucelliasis, were made a subject of a special study. Notable advances were made in the reduction of maternal and infant mortality and in the study of children and adolescents. The necessity of carrying into scientific and practical work the philosophy of dialectic materialism of Marx-Lenin is heavily underscored. Judged by our standards, the plan is comprehensive and the results achieved notable. The papers represent creditable work of a high order. Particularly interesting are the physiologic studies of the subcortical ganglions, the anatomic studies of the circulation of parenchymatous organs by means of an original method of colored celluloid corrosion preparations. Its inventor, Dr. Golubev, established the existence of a closed vascular circulation within the spleen. Reconstructive surgery, transplantation of organs, and blood vessel surgery are among other subjects reported. The paper and print are a vast improvement on the former consignments from the Union of Socialist Soviet Republics.

Pathologie de l'appareil urinaire (reins, vessie). Par Pasteur Vallery-Radot, professeur agrégé à la Faculté de médecine de Paris. Paper. Price, 22 francs. Pp. 201, with 10 illustrations. Paris: Masson & Cie, 1933.

Masson et Cie, Parisian editors, under the direction of Dr. A. Sezary, are publishers of several elementary volumes on medical subjects, which are similar to our American compends. The volume under review is a member of this series. Pasteur Vallery-Radot overcame a difficult problem when he compiled this small elementary volume on the diseases of the kidney and bladder. It was planned primarily for students, especially beginners in the special field of urology, and likewise to remind the general practitioner of those basal facts which he must remember in establishing an accurate diagnosis of disorders of the kidneys and bladder. Many valuable and helpful facts are arranged systematically. This volume is paper bound and is divided into four chapters dealing with symptoms, physical and special examinations, and brief descriptions of renal and bladder diseases. The first chapter deals with a description of those symptoms complained of by the patient, such as hematuria, albuminuria, pyuria, polyuria and oliguria. The second chapter deals with the physical examination and includes cystoscopy, ureteral catheterization, radiography, urinalysis, test of renal function, and pain radiation.

The final two chapters describe the principal disorders of the kidneys and bladder, separately considered. The nephritides are given considerable space (seventy pages), while the surgical diseases are handled more briefly. Brief accounts of renal disorders include amyloid kidneys, pyelonephritis, perinephritis, lithiasis, cancer and tuberculosis, hydronephrosis, polycystic kidney and nephroptosis. Inflammations, stones and tumors of the bladder are considered. This work gives the elementary clinical and pathologic facts and can be recommended to those interested in a short clear reminder. It should be commended for its accuracy and brevity in the presentation of a large and difficult subject.

The Surgery of the Sympathetic Nervous System. By George E. Gask, C.M.G., D.S.O., F.R.C.S., Professor of Surgery, University of London, and J. Paterson Ross, M.S., F.R.C.S., Reader in Surgery, University of London. Cloth. Price, $4. Pp. 163, with 43 illustrations. Baltimore: William Wood & Company, 1934.

The authors have presented a brief survey of the subject of surgery of the sympathetic nervous system as it exists to date. The monograph contains no new contributions to any phase of the subject. It is divided into four chapters. The first deals with the anatomy and physiology of the sympathetic nervous system. The anatomy is discussed in a clear and concise, although brief, manner. The discussion of physiology is too cursory to be of value either to the surgeon or to one seeking specific information concerning the function of this system. This phase has, however, been somewhat further elucidated in the discussion of the various clinical conditions. The second chapter is concerned with disorders of circulation. Various tests of the functional capacity of the vasomotor mechanisms and their clinical significance are discussed. The various operative procedures are then considered, along with a discussion of their clinical application to circulatory disturbances. In chapter III the application of sympathectomy to disorders of the abdominal viscera is discussed, and in the last chapter the utilization of this surgical procedure for the relief of pain. For the most part the text is quite clear; but at times, particularly when dealing with physiologic matters, it becomes confused, even contradictory, as on page 49, where one reads that excision of the diseased proximal portions of an artery may be more efficacious in producing dilatation of the peripheral vessels than simple ligation, because "the vasoconstrictor impulses have been prevented from reaching the peripheral vessels." This is directly contradictory to all anatomic and physiologic knowledge concerning the pathway of constrictor impulses, which the authors have been at some pains to elucidate only a few pages before (p. 43) and to their further discussion (p. 50), in which they bring out that the effect is probably due to the interruption of afferent impulses of a pressor nature. This is the most striking example of rather confused thinking, which is to be found also in a number of other places. On the whole the book is an acceptable introduction to the field it considers, but modern surgery of the sympathetic nervous system is deserving of much more thorough, adequate treatment. The publishers are to be congratulated on the clear, pleasing typography and the illustrations, which are all beautifully reproduced.

Psychiatrische Vorlesungen für Ärzte. Von Prof. Dr. Kurt Schneider, Direktor des Klinischen Instituts der Deutschen Forschungsanstalt für Psychiatrie (Kaiser Wilhelm Institut) in München. Boards. Price, 3.40 marks. Pp. 140. Leipzig: Georg Thieme, 1934.

This little book represents a type of publication found often in Germany but seldom in this country—a handbook of psychiatry for the general practitioner, in which the author attempts to give the physician an outline of those conditions likely to be encountered in general practice rather than to compile a handbook of the psychoses. The point of view stresses the organic background of many of the mental conditions, although the volume itself begins with a study of the two most important functional psychoses, schizophrenia and cyclothymia. These two disorders are briefly studied and their therapy is emphasized. A good discussion of the psychopathic personalities and of neurasthenia is included; since these conditions are much more important to the general practitioner than are psychoses, the book deals with them more fully. Separate chapters are devoted to children's abnormalities and to suicide, two psychiatric entities of considerable importance but usually dealt with as symptoms of major mental disturbances. It must be pointed out that the point of view of the chapter on child guidance is old fashioned and does not fit in with the mental hygiene practices of this country. The whole book must be looked on as a superficial approach to the problems of psychiatry. The entities dealt with are handled in a sketchy fashion, and the practitioner who really wanted to know about these disorders would scarcely find much in this book that would be of value to him. No new views are brought out, and while the style is easy and interesting and the terminology is kept simplified, there is no glossary for the technical terms that must necessarily creep in whenever a specialty is being presented for the practitioner. It is questionable whether this book would be of much help to the American practitioner, since the courses in psychiatry now being given in medical colleges are sufficiently complete to render a volume of this kind unnecessary.

Die geburtshilflichen Operationen: ihre Ausführung und Anwendung. Ein Lehrbuch für Studierende und Gebrauchsbuch für Ärzte. Von Prof. Dr. med. Heinrich Martius, Direktor der Universitäts-Frauenklinik, Göttingen. Paper. Price, 12.50 marks. Pp. 256, with 276 illustrations. Leipzig: Georg Thieme, 1934.

The object of this book is to describe in a concise manner the technic of obstetric operations without quoting statistics or bibliography. After a short description of the genital tract and fetus, the author discusses the various mechanisms of labor and in the following chapters covers the technic of forceps delivery, operations employed in breech presentation, versions, embryotomy, episiotomy, vaginal hysterotomy and abdominal cesarean section. A short chapter is devoted to the treatment of abortion. The text is written clearly and to the point; the handy volume is profusely illustrated; excellent drawings, reproductions of photographs and colored pictures speak for themselves; the print and paper leave nothing to be desired. Seldom does one find a book that is so full of valuable information. The publication can be heartily recommended to every practitioner of medicine.

The Evolution of the Vertebral Column: A Contribution to the Study of Vertebrate Phylogeny. By H. F. Gadow, M.A., Ph.D., F.R.S. Edited by J. F. Gaskell and H. L. H. H. Green. Cloth. Price, $6.75. Pp. 356, with 123 illustrations. Cambridge: The University Press; New York: The Macmillan Company, 1933.

The problem of the evolution of the vertebrae has been one of the author's principal interests throughout a period of forty years. The book is a report of investigations and thought on the morphologic problems of the vertebrate phylum. It contains research on various lines of development of the vertebrae which serve as a guide to the morphologic scheme of vertebrate evolution. The sudden death of the author left the manuscript unfinished—a task that was performed by the editors. Certain chapters are therefore incomplete. The author emphasizes that all vertebrates possess a vertebral column, the evolution of which passes through several successive stages, their phylogenic causal features being on the whole faithfully repeated by the developing individual; that is, the phylogenic changes produced during evolution by alteration of environment are simulated by ontogenic changes that take place during the development of the individual. The material for building the spinal column develops from the notochord, which is of endodermal origin, and from muscular and connective mesodermal tissue, which surrounds the chorda, furnishes the walls of the spinal canal and further extends as septums through most parts of the body. The principal tendencies in evolution of a physiologically adequate axial skeleton reveals the successive, repeated supersession or substitution of the original central axial material by sheaths or mantles that are placed more peripherally. The mammalian vertebral column has reached the highest stage morphologically, the tendency initiated by the reptiles of forming highly efficient bony vertebrae by fewer ossifying units at the expense of others having reached a perfection greater than in birds. This book should be of interest to the students of comparative anatomy but does not contain information of practical value to the general practicing physician or surgeon.

L'artériectomie dans les artérites oblitérantes: Étude expérimentale et thérapeutique. Par René Leriche, professeur à la Faculté de médecine de Lyon, et Pierre Ritrichet. Paper. Price, 40 francs. Pp. 197, with 76 illustrations. Paris: Masson & Cie, 1933.

This summarizes work done by one of the pioneers in the surgical treatment of peripheral vascular lesions. It includes considerable work by his associates but represents the Leriche school of experience. The book contains experimental research on arteriectomy in the treatment of certain obliterating arteritides. There is a discussion of the pathologic anatomy of obliterating arteritides and explanations of the physiologic and pathologic aspects of the subjects. The author outlines the clinical indications for arteriectomy, including traumatic obliterations, monoarteritis of undeterminable origin and embolic obliteration of the arteries. He next discusses primary arteriectomy in wounds and contusions and spontaneous rupture, arteriectomy in obliterating arteritis and their artereographic indications. The illustrations include diagrams, reproductions of photographs and photomicrographs. There is a bibliography of the articles written by French authorities.

Operative Gynecology. By Dr. H. v. Peham, Privy Councillor, Professor of Obstetrics and Gynecology, and Dr. J. Amreich, Privatdozent for Obstetrics and Gynecology of the University, Vienna. In Two Volumes. With an introduction to the edition in English by George Gellhorn, M.D., Professor of Clinical Obstetrics and Gynecology, Washington University School of Medicine, St. Louis, Mo. Authorized translation made by L. Kraeer Ferguson, M.D., Associate in Surgery, University of Pennsylvania. Cloth. Price, $25 per set. Pp. 779, with 467 illustrations. Philadelphia & London: J. B. Lippincott Company, 1934.

This monumental work is divided into three parts. The first part, on general principles, is devoted to a discussion of asepsis and antisepsis, anesthesia, preoperative and postoperative treatment, postoperative complications and their therapy, hemorrhage and hemostasis, and methods of opening the abdomen. In the second part the surgical anatomy of the female pelvis is described. It is recognized today, more than ever before, that a well developed anatomic background is a requisite for a successful operative experience. In this book the pelvic connective tissue, ureters, arteries, veins and lymphatics of the genital system and rectum and the nerve supply are described in greater detail than can be found in any other book of this kind. The authors' own dissections are reproduced in pictures of startling perfection. The colored full page illustrations, accompanied by extensive explanatory legends, come close to actual work on the cadaver. The part on operative technic follows that on anatomy; it starts with a graphic description of the radical abdominal and vaginal hysterectomy. The flowing style is as enjoyable and instructive as the pictorial accompaniment. All the other operations are presented with the same wealth of detail, the surgical procedures being described step by step. Indications for each operation, based on contemporary literature and the authors' own experiences, are discussed at length, thus contributing to perfection of surgical judgment of the reader. Selectiveness of tried operative methods cannot be considered as a shortcoming. Of course, there occur minor differences in the approach to certain problems as compared to ideas prevalent in America. For instance, discussion of ethylene anesthesia has been omitted; Jansky's and the international classification of blood grouping and paraffin (Percy) method of blood transfusion are not described; the use of dextrose injections in postoperative treatment is not mentioned. The excellent quality of paper and the large type contribute to the reader's enjoyment. All in all, this treatise represents an unusual combination of art and science that cannot be too highly recommended.

The Cancer Problem and Its Solution. By Hastings Gilford, F.R.C.S. Cloth. Price, 2s.6d. Pp. 59. London: H. K. Lewis & Company, Ltd., 1934.

In a highly interesting and purely philosophical discussion, the author concludes that cancer is a national punishment or scourge that affects all civilized nations, in which there is an ever increasing growth of national degeneracy. According to his theory there is a definite and direct connection between cancer of the individual and the decadence of the race. He further believes that the behavior of mankind is so completely irrational that the present generation is in the hands of an uncontrollable destiny and that like all other peoples in history we are fated to become nationally senile to complete our cycle and to die as other nations have died; that some great calamity or terrible plague is needed to rouse us out of our apathy, and that cancer is the scourge that has been visited on us to accomplish this deed. Four causes of predisposition to cancer are cited: senescence, disuse, excessive stimulation and heredity. The author especially stresses the neglect of work or exercise of function as leading to premature degeneration of the intestinal tract, and that out of this degeneration cancer finds its congenial soil. As the author himself points out, the scientific mind, accustomed to precise clinical and laboratory data, will be interested in but not convinced by his thesis. He believes that there are already adequate data for the solution of the cancer problem, that such data merely require a proper correlation to supply the solution, and that we need not concern ourselves with the addition of new facts. This may be true; but it is impossible to prove and appears a rather dangerous position to adopt, and certainly one that might greatly hinder or make impossible any further progress in cancer research. One cannot help but be struck with the simplicity of the solution of so complex a problem as the cause and prevention of cancer that is presented by the author, a simplicity that naturally arouses a certain degree of skepticism. It cannot be denied, however, that the ultimate solution of the cancer problem may lack the complexity which we suspect. The author presents his point of view in an interesting manner and attractive style. It is well worth reading, particularly because of the broad and social point of view that it presents and on account of its interesting philosophical speculation.

Gelenkstörungen und Gelenkplastik. Von Professor Dr. Erwin Payr, geheimer Medizinalrat, Direktor der chirurgischen Universitätsklinik Leipzig. Teil 1: Pathologische Biologie der Gelenke. Pathogenese und pathologische Anatomie der Ankylosen. Klinik, Diagnostik und Anzeigestellung. Paper. Price, 120 marks. Pp. 880, with 240 illustrations. Berlin: Julius Springer, 1934.

The author of this book is well known and his name commands the highest respect and closest attention. The subject matter is divided into the pathology, biology and comparative anatomy. The manuscript is written with the usual German accuracy and verbosity. At times one finds twenty-five large pages of closely printed manuscript without an illustration. The book contains reproductions of photographs, roentgenograms, gross and microscopic sections and diagrams. One anticipates many redeeming features in the second volume and will be sadly disappointed if the surgical treatment is not presented in an admirable manner by manuscript and illustrations. The price of this paper bound volume is a glaring overcharge.

Keeping a Sound Mind. By John J. B. Morgan, Professor of Psychology, Northwestern University. Cloth. Price, $2. Pp. 440, with one illustration. New York: Macmillan Company, 1934.

This book is offered for the dual purpose of serving as a textbook in courses of mental hygiene and as a guide to enable the college student to apply the principles of mental health to himself. The two purposes can hardly be competently dealt with in one book and, in the present volume, it would seem that the author has compiled a work better fitted for self guidance than for teaching. The mental hygiene principles are well laid out. The chapters are systematic and the points brought out in each are interesting and graphically presented by means of short, illustrative situations and admonitory disquisitions. Most of the material is taken directly from the literature of mental hygiene, although direct quotations are not made and it is so modified that it fits systematically into chapters with such descriptive titles as "Mental Conflicts," "Mastery of Fear" and "Counteracting Defects." Since the mental hygiene movement is so largely made up of freudian and adlerian doctrines, these predominate in the present volume, though the author has also drawn much interesting material from the field of experimental psychology. When reading a book of this sort, the question arises whether mental conditions are not overemphasized in the patient's mind to the extent that efforts which he makes to correct an existing or supposed disorder may be detrimental to him, and the hortatory method of administering psychotherapy is a questionable one in cases in which there is real pathologic change. On the other hand, this book is well written and it adheres to the beliefs current

in its field so closely that it cannot be severely criticized. However, it is certainly not a scientific textbook and the technics presented, in some spots, for the purpose of determining mental health cause one to wonder where the author obtained his ideas; but the book will probably be just as useful as the many other works of its ilk.

Le dualisme de la contraction cardiaque: Recherches expérimentales du laboratoire de thérapeutiques de l'Université de Liége. Par F. Henrijean, Docteur Honoris causa des Universités de Paris, de Lyon, de Toulouse, etc. Paper. Price, 50 francs. Pp. 350, with 97 illustrations. Paris: Masson & Cie, 1933.

This monograph, which is published posthumously, is the "scientific testament" of the thirty years' work which Henrijean put into the study of cardiac contraction. He presents evidence obtained by himself and others to defend the proposition that two systems exist in the heart, one essentially excitatory and the other essentially contractile. The QRS complex he ascribes to activity of the former and the T wave to the activity of the latter. In this work the author has gone a long way to reconcile his original contentions with the modern classic concepts. His views as explained in this monograph are somewhat different from those in his monograph published three years before. The complexity of the presentation and the originality of the author's point of view make this work suitable only for the advanced student of cardiology.

Traitement des maladies rhumatismales par la sanocrysine. Par Knud Secher, médecin-chef à l'Hôpital de Blapehjerg, Copenhague. Second edition. Paper. Pp. 84, with 25 illustrations. Copenhagen: Levin & Munksgaard; Paris: J. B. Baillière et Fils, 1933.

This edition records the author's experience in the treatment of rheumatic disease since 1933. He outlines in detail the indications for the control of the condition and dosage of sanocrysin, with a complete discussion of the course of treatment. Gold salt was originally introduced by Möllgaard in 1914 in the treatment of pulmonary tuberculosis. The compound used is sodium thiosulphate and gold, known under the name of sanocrysin. A complete bibliography is given.

Medicolegal

Malpractice: Hypodermic Needle Left in Pleural Cavity.—Reinhold was suffering from acute pneumonia and it became necessary "to perform an operation known as 'tapping the lungs.'" Dr. Spencer, using procaine hydrochloride to deaden the pain, operated. He used a syringe carrying a hypodermic needle approximately 2¼ inches long. According to the testimony, the physician, when he withdrew the syringe from his patient's body, uttered an exclamation of surprise, handed "what looked like a part of the syringe" to the nurse, and asked for another one, which was given him. The syringe handed to the nurse "looked like the point was broken off," and thereafter the patient "had an awful pain in his chest on the inside." An opening was made into the chest and a drainage tube inserted. According to the record, the operation was scientifically and properly performed, and the wound was sewed up and healed normally. No attempt was made at any time while the patient was in the hospital to remove the needle and apparently he was not notified of its presence. The patient continued to suffer constant pain in his chest, which was so severe on physical exertion as to prevent his doing manual labor. The needle, in the left pleural cavity, was discovered later by a roentgenographic examination, but an effort made to remove it was abandoned as too greatly endangering the patient's life, and it remained in the plaintiff's body at the time of the trial. The patient sued his physician, charging negligence and unskilfulness in handling the hypodermic needle inserted into the plaintiff's pleural cavity in such a manner as to allow the needle to become detached from the syringe, and negligently and unskilfully leaving the needle in the pleural cavity and in discharging the patient as cured without informing him of his condition. Judgment was given in favor of the plaintiff, and the defendant-physician appealed to the Supreme Court of Idaho.

The Supreme Court found that the evidence was adequate to show that the pain suffered by the patient subsequent to the operation resulted from the presence of the hypodermic needle in his chest and diminished the patient's ability to perform manual labor. It held that testimony to show the extent of the pain and its effect on the patient's ability to perform manual labor was properly admitted. There was no such uncertainty as to whether the patient's pain and suffering were caused by the hypodermic needle or by some other cause as to require the jury to guess or conjecture as to its cause. The roentgenograms in the case were properly proved and admitted in evidence. Testimony by the roentgenologist, a physician, as to the probable course of events if the needle remained in the patient's body, was properly admitted. The admission of life tables to prove the extent of the patient's future suffering and loss was proper, notwithstanding the fact that there was evidence that the patient had in previous years been injured and had had several operations for varicose veins on one of his legs. No evidence was introduced to show that the injury he had suffered or the operations performed resulted in any impairment of the patient's health likely to diminish the span allotted by the life tables to men of his age. The evidence was sufficient to support the verdict against the defendant-physician and the judgment entered on it. The judgment was therefore affirmed by the Supreme Court.—*Reinhold v. Spencer (Idaho), 26 P. (2d) 796.*

Malpractice: Alleged Negligence in Treatment of Gunshot Wound.—On August 24, McDermott was shot, the bullet passing through the right axillary fold. He was immediately taken to a hospital, where the wound was cleaned and gauze packs were applied in front where the bullet entered and in the back where it passed out. Drs. Lamb and Gray, who were called to treat the patient, arrived about an hour after the patient was admitted to the hospital. They found his radial pulse good and no evidence of injury to any nerve trunk. There was no bleeding. They concluded therefore not to probe the wound but to care for the patient and to await developments. His condition remained good until September 3, when it was discovered that a blood clot had formed internally, that the circulation was impaired, and that the nerves in the arm did not react properly to tests. A third physician was then called in, and the following morning the three physicians operated. When the blood clots were removed, the vein bled profusely. Its distal end was tied, but its proximal end was not. Bleeding ceased. Thereafter, however, a blood clot formed in the vein, passed into the heart and thence into the lung, and thus caused the patient's death.

McDermott's widow sued Drs. Lamb and Gray for malpractice. While the suit was in progress, Dr. Gray died and his widow, as executrix of his estate, was substituted as a party. The complaint as to Dr. Lamb was dismissed by the plaintiff. At the close of the evidence for the plaintiff, the then defendant, Dr. Gray's widow, requested the court to direct the jury to return a verdict in her favor, but this the court refused to do. A judgment of $20,000 was entered against her, and she appealed to the Supreme Court of Arkansas.

The plaintiff based her action in part on the charge that Dr. Gray was negligent on August 24, when he did not open the wound to determine whether or not the bullet had severed an artery or a vein, but she introduced no evidence to support that charge. On the other hand, the defendant called five or six physicians, who testified that in their opinion it would have been bad practice to go into the wound to determine whether a vein had been severed; probing might puncture the axillary artery, axillary vein or a nerve controlling the arm, and the severance of any of them would endanger life and diminish the chance of recovery. The only purpose of entering the wound on August 24 would have been to stop hemorrhage, and since hemorrhage had stopped before Dr. Gray arrived it would have been unreasonable for him to open the wound; it was better for him to await developments, after giving antitoxin. The only expert witness called by the plaintiff did not controvert this testimony.

As further ground for her suit, the plaintiff charged that the defendant was negligent in failing to ligate both ends of the vein during the operation on September 4. All the expert

witnesses agreed that where a vein is recently severed, both ends should be ligated. There was no testimony showing or tending to show that that procedure should be followed where the tissues had sloughed, opening a hole into the vein some days after the original injury, the mishap not being discovered until after internal bleeding had taken place sufficient to form two clots the size of a lemon. Under such circumstances, the medical witnesses agreed, the operating physician should ligate the bleeding end of the vein, but that it was not his duty to ligate the proximal end if it was not bleeding; because of the lapse of time, a blood clot was necessarily present in the non-bleeding proximal end of the vein and the manipulation would be likely to disturb the clot. This testimony, the court thought, was not in conflict with that of the medical expert who testified for the plaintiff, that if a section of the axillary vein had been taken out, both ends should have been ligated, for in this case no part of the vein was removed.

In the absence of expert testimony in support of the plaintiff's theory, the jury should not have been allowed to speculate on whether or not the physicians who were in attendance on the plaintiff's husband followed a proper professional course. The uncontradicted testimony showed that they treated the patient with the degree of skill and learning ordinarily possessed and exercised by members of their profession in good standing in the community, that they used reasonable care in the exercise of their skill while attending him, and that they exercised their best judgment. That is all that the law of Arkansas requires of physicians.

Because the trial court erred in refusing to direct the verdict for the defendant, the Supreme Court dismissed the suit.—*Gray, Ex'x., v. McDermott (Ark.), 64 S. W. (2d) 94.*

Workmen's Compensation Acts: Paralysis Agitans Following Trauma.—On Aug. 12, 1928, in the course of his employment, Moffett, a strong, able-bodied man, 24 years old, was lifting cases of canned peas. A case weighed 40 pounds, but two cases happened to be stuck together and Moffett unexpectedly encountered a load twice as great. He immediately felt pain in his right side and back, at the top of his hip bone, and had to discontinue his work. He was treated by a physician, who diagnosed the case as "antero-posterior lumbago." On returning to duty the next day, Moffett was assigned to light work. When on that day he visited his physician's office, he was more nervous than usual. Within three weeks he had a pronounced tremor in his left foot, which gradually spread to both legs, his tongue and his head. Ultimately he became unable to perform his duties with his then employer and found lighter work, which he followed until it became impossible for him to work at all.

Moffett's disability immediately incident to the accident was adjusted by the payment of compensation and hospital expenses, Oct. 19, 1928, and the industrial accident board of Montana heard nothing further concerning the case until September 1930. Then Moffett claimed compensation for total disability. The board disallowed his claim and he appealed to the district court, Gallatin County, which ordered the payment of compensation. Moffett's employer and his employer's insurance carrier appealed to the Supreme Court of Montana.

The question for determination, said the Supreme Court, was whether or not the accident was the proximate cause of Moffett's disability. All physicians who testified agreed that he was suffering from Parkinson's disease (paralysis agitans) or the parkinsonian syndrome, commonly known as shaking palsy, either of which totally disables its victim and is progressive and incurable. As to its proximate cause, however, there was a conflict of medical opinion. Medical science has not definitely determined the cause of Parkinson's disease or of the parkinsonian syndrome in the individual patient, but it follows trauma, infection or emotion, and therefore medical authorities have adopted the theory that it may be caused by any one of those conditions.

In the present case, the testimony ruled out emotion and the type of infection which medical experts used principally as the basis of their deductions concerning the causation of the disease. There was no evidence that Moffett ever had encephalitis lethargica (sleeping sickness) or that there had ever been a case of that disease in the community. If gonococci were present—a conclusion left in doubt by the testimony—it was not shown that they constituted an infection known to be followed by this disease, which ordinarily attacks the aged and but rarely the young. The evidence thus ruled out practically all the theoretical causes except trauma. Dr. Kelly testified that in his opinion Moffett's condition "was caused at the time of the injury." Dr. Rodes, who thought Moffett was suffering from the parkinsonian syndrome and not from Parkinson's disease, was "inclined to believe or feel that the accident was not the cause." Dr. Cooney believed that injury was not the cause. Dr. Treacy was of the opinion that the injury did not cause Moffett's condition but that his condition was "almost certainly a result of an infection which resulted in encephalitis lethargica." A report from Dr. Bolton surmised that Moffett's condition was "probably due to previous infection." The medical witnesses frankly admitted, however, that they did not know, and that the "authorities" did not know, what causes Parkinson's disease or the parkinsonian syndrome. The statements made by the doctors, said the court, hardly rise to the dignity of expert opinions; they are more in the nature of surmises based on the pathology of the disease than on facts which an attorney would be entitled to include in a hypothetical question propounded in the case. Under all the rules of evidence, when an expert witness, after answering a hypothetical question, admits that he does not know the answer and that no one in his profession does, the expert's answer should be stricken from the record and wholly disregarded by the trier of the facts. The so-called opinions of the medical experts, the Supreme Court concluded, were too speculative and conjectural to support the finding of the industrial accident board denying compensation to Moffett.

Moffett produced all the evidence possible. No known authority could furnish positive testimony that would have induced the board to award compensation. But because medical science has not progressed to a stage where one learned therein can say positively "this is the cause" or "that is not the cause," one who has indubitably sustained an industrial accident, followed by a disease which totally incapacitates him and which it is known may follow such an accident, is not to be denied compensation. The law does not require the impossible. Moral certainty only is required, or that degree of proof which produces conviction in the unprejudiced mind. If the fact that the claimant would not be in his present condition if he had not been injured is fairly deducible from the uncontroverted testimony, then the evidence preponderated against the finding of the industrial accident board and warranted the district court in declaring that its findings against the claimant were unreasonable.

The Supreme Court found the evidence sufficient to support the judgment in Moffett's favor but remanded the case to the district court for proper action with respect to certain stated modifications of the award previously made.—*Moffett v. Bozeman Canning Co. (Mont.), 26 P. (2d) 973.*

Society Proceedings

COMING MEETINGS

American Association for the Study of Neoplastic Diseases, Baltimore, June 21-23. Dr. Eugene R. Whitmore, 2139 Wyoming Avenue, N.W., Washington, D. C., Secretary.

American Ophthalmological Society, Lucerne-in-Quebec, Canada, July 9-11. Dr. J. Milton Griscom, 2213 Walnut Street, Philadelphia, Secretary.

Minnesota State Medical Association, Duluth, July 16-18. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.

Montana, Medical Association of, Helena, July 11-12. Dr. E. G. Balsam, Box 88, Billings, Secretary.

New Mexico Medical Society, Las Vegas, July 19-21. Dr. L. B. Cobenour, 219 West Central Avenue, Albuquerque, Secretary.

North Pacific Pediatric Society, Vancouver, B. C., June 18. Dr. R. H. Somers, 1305 Fourth Avenue, Seattle, Secretary.

Pacific Coast Oto-Ophthalmological Society, Butte, Mont., July 16-18. Dr. F. C. Cordes, Pittshugh Building, San Francisco, Secretary.

Pacific Northwest Medical Association, Salt Lake City, June 21-23. Dr. C. W. Countryman, 407 Riverside Avenue, Spokane, Wash., Secretary.

Utah State Medical Association, Salt Lake City, June 21-23. Dr. Leland R. Cowan, 305 Medical Arts Building, Salt Lake City, Secretary.

Wyoming State Medical Society, Casper, July 16-17. Dr. Earl Whedon, 50 North Main Street, Sheridan, Secretary.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American J. Digestive Diseases and Nutrition, Chicago

1:1-90 (March) 1934

Amebiasis and Amebic Dysentery. C. F. Craig, New Orleans.—p. 4.
Amebic Dysentery in Chicago. H. N. Bundesen, Chicago.—p. 9.
"Certain Atypical Types of Amebiasis." P. W. Brown, Rochester, Minn.—p. 10.
Migraine, an Allergic Phenomenon. A. F. R. Andresen, Brooklyn.—p. 14.
Diagnosis and Management of Gall Tract, Particularly Gallbladder, Disease: Proposal for Better Standardization of Methods. B. B. V. Lyon, Philadelphia.—p. 18.
Gastric Ulcers Associated with Cinchophen Poisoning: Report of an Instance with Consideration of the Possible Etiologic Relationship. L. Bloch and D. H. Rosenberg, Chicago.—p. 29.
Sympathetic Secretory Innervation of the Gastric Mucosa. S. G. Baxter, Montreal.—p. 36.
Rôle of Sympathetic Nervous System in Gastric Secretion. S. G. Baxter, Montreal.—p. 40.
Nutrition in Health and Disease. C. J. Barborka, Chicago.—p. 44.
Why Peptic Ulcers Are Missed on X-Ray Examination. W. H. Stewart and H. E. Illick, New York.—p. 52.
Treatment of Amebic Dysentery. H. W. Soper, St. Louis.—p. 58.
Primary Carcinoma of the Liver in Infancy: Report of an Instance. R. A. Kordenat, Chicago.—p. 60.
Unusual Problems in Plastic Surgery of the Colon. J. M. Lynch and V. Hurley, New York.—p. 66.
Multiple Fissures of the Anus in a Case of Tertiary Syphilis. L. A. Buie and W. L. Butsch, Rochester, Minn.—p. 69.
Tuberculous Ulceration of the Rectum and Sigmoid as Observed Proctoscopically. C. L. Martin, Chicago.—p. 70.

American Journal of Diseases of Children, Chicago

47:719-944 (April) 1934

*Hypophyseal Infantilism: Treatment with an Anterior Hypophyseal Extract: Preliminary Study. E. K. Shelton and L. A. Cavanaugh, Santa Barbara, Calif., and H. M. Evans, New York.—p. 719.
Electrocardiographic Studies During Pneumonia in Infants and in Children. A. F. Abt and M. I. Vinnecour, Chicago.—p. 737.
Clinical Radioscopic Studies of the Heart in Children: Roentgenologic Criteria of Cardiac Enlargement: Size of Angle of Clearance of Left Ventricle as Criterion of Ventricular Enlargement. May G. Wilson, New York.—p. 750.
*Tuberculin Ointment Patch Test. E. Wolff, with assistance of M. H. Teitler, San Francisco.—p. 764.
Intranuclear Inclusions: Incidence and Possible Significance in Whooping Cough and in a Variety of Other Conditions. H. A. McCordock and Margaret G. Smith, St. Louis.—p. 771.
Frequency of Pyuria in Anomalies of the Urinary Tract in Children. J. A. Bigler, Chicago.—p. 780.
Selection of Malnourished School Children. R. Fransen, New York.—p. 789.
Immunity Produced by Diphtheria Toxoid. J. Greengard, Chicago.—p. 799.

Treatment of Hypophyseal Infantilism.—Shelton and his associates treated six children for a secretory deficiency of the anterior hypophysis. The diagnosis was presumptive in five cases and was verified in one. Four patients were treated by the intragluteal injection of a growth-stimulating fraction of the bovine anterior hypophysis; one was treated with desiccated thyroid and desiccated whole pituitary gland given orally; one was left untreated for twenty-three months and then given the growth-stimulating fraction of the bovine anterior hypophysis. The two latter patients served as controls. The growth increment of the four treated patients was considerably in excess of the expectancy, as computed from the average growth rate for the previous four years, and was slightly in excess of the theoretical normal rate for their ages. It was not definitely determined whether the rate was in direct ratio to the amount of substance administered or whether the potency of the filtered material was altered by the addition of a preservative. The authors believe that the growth increment was greater in the first few months of treatment than subsequently. This may have been due either to a difference in the physiologic response or to the difference in the material. One child changed in configuration and appearance. The growth increment for the two control cases was slightly in excess of the expectancy, but below the theoretical normal. The growth increment for the control case, in which the growth-stimulating fraction was given later, was in excess of the theoretical normal and several times the previous rate. The authors do not consider that stimulation of growth has been proved, except in one case. Careful observation for at least a year is necessary to verify the results in the other children.

Tuberculin Ointment Patch Test.—In the tuberculin ointment patch test, Wolff applies the ointment in the paravertebral region between the eighth and eleventh thoracic vertebrae or on the medial brachial surface. The skin is cleansed with green soap and water, dried, bathed with benzene and dried again. A pea-sized drop of the tuberculin ointment is applied on the right side, and a similar sized drop of the control ointment is applied on the left side. Each of these drops is covered with a 2 inch (5 cm.) square of adhesive tape. The test is read in forty-eight hours. The adhesive tape is removed after soaking with benzene and the area is cleansed with benzene. The reaction may be clearly observed ten minutes after the tape is removed. Positive reactions exhibit papules, erythema, induration and pigmentation. A weak positive test shows a few (not more than twenty) discrete pale rose papules of a diameter of from 1 to 3 mm. A medium reaction shows many vividly red papules. A strong reaction shows, in addition, yellow-brown pigmentation of the test area, plateaus of induration and marked reddening. The papules may show formation of vesicles. In weak reactions it is advisable to palpate the area in order to detect the follicles and to make a comparison with the control. The author obtained an agreement in 95.8 per cent of the cases between the ointment patch tests and the intracutaneous tuberculin tests (all dilutions) performed on 190 children. The ointment patch test is generally comparable in results with an intracutaneous injection of 0.1 cc. of old tuberculin, 1:100.

American J. Obstetrics and Gynecology, St. Louis

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Application of Endocrinology to Gynecologic Problems. E. Novak, Baltimore.—p. 473.
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Effects of Pregnancy on Organ Weights of the Albino Rat. M. Abramson, Minneapolis.—p. 492.
Diffusible Serum Calcium in Pregnancy. H. O. Nicholas, H. W. Johnson and R. A. Johnston, Houston, Texas.—p. 504.
Variations in Serum Calcium and Phosphorus During Pregnancy: I. Normal Variations. J. W. Mull and A. H. Bill, Cleveland.—p. 510.
Primary Breech Presentations: Study of Five Hundred and Fifty Consecutive Deliveries in the Cleveland Maternity Hospital, 1923-1932. D. E. Cannell, Cleveland, and S. M. Dodek, Washington, D. C.—p. 517.
Cardiac Disease in Pregnancy. H. J. Stander, New York.—p. 528.
Fetal Mortality in Contracted Pelvis with Prolonged Labor and Delivery Through Birth Canal. C. H. Peckham and K. Kuder, Baltimore.—p. 537.
Effect of Pregnancy on Ureters of Common Animals. W. F. Mengert, Philadelphia.—p. 544.
Lesions of Fifteen Hundred Placentas Considered from Clinical Point of View. H. F. Traut and Alberta Kuder, New York.—p. 552.
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Some Attempts to Influence the Menstrual Cycle in the Monkey. C. G. Hartman, Baltimore.—p. 564.
Effect of Jaundice on the Vaginal Smear Picture and Pregnancy of the Rat. J. D. Greaves and C. L. A. Schmidt, Berkeley, Calif.—p. 570.
Deliberate Rupture of Membranes Early in Labor. A. G. King, New Orleans.—p. 576.
*Smallpox Vaccination of the New-Born: Report on Eight Hundred and Eight Attempts. Leabelle Isaac, New York.—p. 580.
Anatomic Study of a Mammary Gland Twenty-Four Hours Post Partum. Irene A. Koeneke, Halstead, Kan.—p. 584.
Cystic Schwannoma of the Sacral Plexus. R. T. Frank, New York.—p. 593.
Brenner Tumor of the Ovary. S. A. Wolfe and S. Kaminester, Brooklyn.—p. 600.
Acute Renal Failure Complicating Pregnancy (Symmetrical Necrosis of the Renal Cortex). I. J. Strumpf, New York.—p. 603.
Primary Carcinoma of the Female Urethra Treated with Radium: Three Cases. L. A. Pomeroy, Cleveland.—p. 606.
Intrapartum Gas Bacillus Infection. A. A. Marchetti, New York.—p. 613.
Biopsy Specimens of the Endometrium. P. E. Hoffmann, San Francisco.—p. 616.
Spondylolisthesis: Case. H. C. Williamson, New York.—p. 618.

Carcinoma of Cervix Uteri with Complete Procidentia. W. F. Boukalik, Cleveland.—p. 620.
Dystocia Following Cervical Amputation. H. C. Hesseltine, Chicago.—p. 621.
Umbilical Cord Clamp. H. F. Kane, Washington, D. C.—p. 623.

Smallpox Vaccination of the New-Born.—On the basis of 808 vaccinations of new-born infants, Isaac concludes that there is practically no danger associated with the inoculation of mature infants immediately after birth. Reactions are apt to be more severe in premature infants, and it is advisable to postpone vaccination until they show a satisfactory gain in weight. The percentage of takes depends largely on the freshness of the vaccine, but girls seem more susceptible than boys, and more positive reactions are obtained on the thighs than on the arms. Positive reactions do not adversely affect the weight curve and rarely cause elevations of temperature. Moreover, they are not affected by, nor do they affect, the incidence or course of the common intercurrent infections—conjunctivitis, thrush and impetigo. Children of mothers giving positive blood Wasermann reactions rarely show takes.

American Journal of Ophthalmology, St. Louis

17: 195-290 (March) 1934

Hereditary Optic Atrophy (Leber's Disease). A. J. Bedell, Albany, N. Y.—p. 195.
Unioocular Conjunctivitis from Peat Dust. B. J. Powell Jr., Stockton, Calif.—p. 206.
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Suggestions for Prevention of Blindness. A. Fuchs, Vienna, Austria.—p. 232.
Corneal Calcification (Band-Shaped Keratitis) with Conjunctival Changes: Case. F. B. Walsh and E. Chan, Baltimore.—p. 238.
Recurrent Edema of the Lids and Conjunctiva Associated with Dental Infection: Report of Two Cases. H. Scarlett, Philadelphia.—p. 242.
Paradoxical Images in Vertical Rectus Palsies: Report of Two Cases. M. Fields, Los Angeles.—p. 245.

American Journal of Pathology, Baltimore

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*Hyperactivation of the Neurohypophysis as the Pathologic Basis of Eclampsia and Other Hypertensive States. H. Cushing, New Haven, Conn.—p. 145.
Cardiovascular Renal Changes Associated with Basophil Adenoma of the Anterior Lobe of the Pituitary (Cushing's Syndrome). H. E. MacMahon, H. G. Close and G. Hass, Boston.—p. 177.
Studies on Inflammation: X. Cytologic Picture of an Inflammatory Exudate in Relation to Its Hydrogen Ion Concentration. V. Menkin, Boston.—p. 193.
Cultivation of Mexican and European Typhus Rickettsiae in the Chorio-Allantoic Membrane of the Chick Embryo. S. Zia, Boston.—p. 211.
Cytopathologic Studies of Morphine Poisoning and Chronic Morphinism in the Albino Rat, with Reference to Subsequent Lecithin Treatment. E. S. Horning, New South Wales, Australia.—p. 219.
Histology of the Coronary Arteries and Their Branches in the Human Heart. L. Gross, E. Z. Epstein and M. A. Kugel, New York.—p. 253.
Experimental Studies on Venereal Sarcoma of the Dog. E. L. Stubbs and J. Furth, Philadelphia.—p. 275.
*Renal Lesions of Rheumatic Fever. J. L. Blaisdell, Toronto.—p. 287.
Primary Amyloid Disease of the Heart: Report of Case. J. W. Budd, Los Angeles.—p. 299.
Hodgkin's Disease in a Dog: Case. H. E. MacMahon, Boston.—p. 309.
Primary Carcinoma of the Duodenum. V. J. Dardinski, Washington, D. C.—p. 313.
Addenda to a Theory of Pigmented Moles. G. F. Laidlaw, New York, and Margaret R. Murray.—p. 319.

Hyperactivation of the Neurohypophysis in Hypertensive States.—Cushing observed a heavy infiltration of basophilic elements in the posterior lobe in six of nine pituitary bodies from fatal cases of eclampsia and in a number of glands from cases of essential or nephrovascular hypertension. In advancing years there is a tendency for the basophilic cells to wander in large numbers into the posterior lobe. The condition has been looked on merely as a concomitant of old age, particularly when attended by atherosclerosis and renal disease. In essential hypertension, as in eclampsia, lesions affecting the terminal arterioles of the kidneys have been thought to indicate a primary nephrovascular disorder. Necroses in eclampsia, however, are not limited to the liver, nor are the terminal arteriolar lesions in essential hypertension confined to the kidneys. In neither instance do the histopathologic observations account satisfactorily for the clinical symptoms. From his observations the author concludes that the source of these hypertensive disorders lies in the posterior lobe of the pituitary body, that the extent of basophilic invasion from the pars intermedia is a measure of posterior lobe activity and that excessive infiltration by these elements represents the histopathologic basis of eclampsia and essential hypertension in young persons and may possibly also be related etiologically to the atherosclerosis of old age.

Renal Lesions of Rheumatic Fever.—Blaisdell studied the kidney lesions in sixteen cases of rheumatic fever. A perivascular inflammatory reaction of the acute nonsuppurative type, affecting the smaller arteries and arterioles, was present in eight cases. Evidence of perivascular scarring was noted in four, while a recurrent type of inflammation was encountered in two. The inflammatory reaction is usually seen in the adventitial and periadventitial tissues, with occasional infiltration and destructive changes in the medial coat. Intimal changes, consisting of an endothelial swelling and proliferation, are inconstant. Glomerular damage, which was well marked in only one case, is to be regarded as dependent chiefly on nutritional disturbances brought about by vascular changes. Little evidence of active or healed inflammatory processes was noticed in the glomeruli. No evidence of the specific vascular lesions described by Pappenheimer and Von Glahn was observed in the cases studied. The lesions described, which in general bear a close resemblance to perivascular foci of inflammation found in the myocardium, may be looked on as constituting a definite type of interstitial nephritis. It is seldom, however, that sufficient alteration in structure to justify a diagnosis of renal disease during life occurs.

American Journal of Physiology, Baltimore

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Adrenal Secretion in Man: Reactions of Blood Vessels of Human Extremity, Sensitized by Sympathectomy, to Adrenalin and to Adrenal Secretion Resulting from Insulin Hypoglycemia. N. E. Freeman, R. H. Smithwick and J. C. White, with collaboration of B. Cannon and H. Heyl, Boston.—p. 529.
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Action of Oxygen in Counteracting Alcoholic Intoxication. A. L. Barach, New York.—p. 610.
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Alleged Presence of "Hemopoietin" in Blood Serum of Rabbits Either Rendered Anemic or Subjected to Low Pressures. A. S. Gordon and M. Dubin, New York.—p. 704.

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The Autonomic Nervous System: Sketch of Its Structure and Functions with a Consideration of Its Cerebral Connections. E. A. Linell, Toronto.—p. 925.
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Note on a "Proteose-Like" Substance in Spinal Fluid. P. G. Schube, Boston, and R. C. Whitehead, Denver.—p. 1083.
*Study of the Total Protein of the Cerebrospinal Fluid in Uncomplicated and Untreated Neurosyphilis. P. G. Schube, Boston.—p. 1085.
Psychiatric Resources of New York: Brief Description for Those Attending the 1934 Meeting. S. W. Hamilton, White Plains, N. Y. —p. 1097.

Total Protein of Cerebrospinal Fluid in Neurosyphilis.—Schube presents a study of the total protein of the cerebrospinal fluid measured to 1 mg. per hundred cubic centimeters of cerebrospinal fluid from 446 patients with uncomplicated and untreated neurosyphilis. There were 357 cases of dementia paralytica, forty-eight cases of tabes without psychosis and forty-four cases of cerebrospinal syphilis with psychosis. The average value for the total protein of the cerebrospinal fluid was 75.4 for all cases of neurosyphilis, 79 in dementia paralytica, 57.9 in tabes without psychosis and 65.68 in cerebrospinal syphilis with psychosis. The middle 50 per cent of the cases had a total protein falling between 41.01 and 109.79 mg. for all cases of neurosyphilis, between 43.7 and 114.3 mg. in dementia paralytica, 37.06 and 78.74 in tabes without psychosis, and 31.96 and 99.4 mg. in cerebrospinal syphilis with psychosis. There is no true difference between any of the means excepting neurosyphilis and tabes without psychosis, and dementia paralytica and tabes without psychosis. In these two instances the difference is so pronounced that there is no question concerning its existence. If 39.99 mg. per hundred cubic centimeters of cerebrospinal fluid is accepted as the upper limit of normal protein, it was found that 23.09 per cent of all the cases of neurosyphilis possessed normal values and that 20.72 per cent of the dementia paralytica cases, 29.16 per cent of the cases of tabes without psychosis and 34.09 per cent of the cases of cerebrospinal syphilis with psychosis possessed normal values.

American Journal of Public Health, New York

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American Journal of Surgery, New York

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Diagnosis and Treatment of Peripheral Vascular Diseases. M. R. Reid, Cincinnati.—p. 11.
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Basal Metabolism: Practical Observations. J. W. White, Scranton, Pa.—p. 42.
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Value of Enterostomy in Intestinal Surgery. R. L. Evans, Warsaw, N. Y.—p. 53.
Catastrophes of Peptic Ulcer. E. L. Eliason and W. W. Ebeling, Philadelphia.—p. 63.
Duodenal Fistula. E. L. Kellogg and W. A. Kellogg, New York.— p. 83.
Benign Tumors of the Cecum: Their Differentiation and Treatment: Report of Two Cases. J. J. McGrath and S. Eiss, New York.— p. 88.
The Redundant Cecum: Its Symptom Complex and Treatment. H. V. Sharp, Akron, Ohio.—p. 94.
Drainage. R. C. Chaffin, Los Angeles.—p. 100.
Anorectal Fistulectomy: New Method. E. Katskee, Lincoln, Neb.—p. 105.
Aid in the Diagnosis of Inguinal and Femoral Hernia. R. I. Grausman, New York.—p. 108.
Technic of Ligating the Hernial Sac. H. T. Wikle and C. E. Stellborn, Brooklyn.—p. 109.
Calculous Pyonephrosis: Clinical Study, with Especial Reference to Etiology and Treatment: Review of Literature: Report of Six Cases. I. E. Nash, New York.—p. 110.
Prostatic Calculi. H. G. Hamer and T. A. Dykhuizen, Indianapolis.— p. 119.
Surgical Management of Bilateral Nephrolithiasis. F. P. Twinem, New York.—p. 124.
Spinal Anesthesia: Report of One Thousand Four Hundred and Ninety Cases. T. F. Howley, New York, and J. P. Robertson, Birmingham, Ala.—p. 129.
Basal Anesthesia with Sodium Amytal. J. B. Matthews and D. C. Ausman, Milwaukee.—p. 134.
Metycaine in Spinal Anesthesia. W. R. Meeker, Mobile, Ala., and P. L. McCreary, Atlanta, Ga.—p. 139.
Ectopic Bone. J. E. Kearns, Cleveland.—p. 142.
Relation of Streptococcus Viridans to Apophysitis of Tibial Tubercle (Osgood-Schlatter's Disease): Bone "Stimulation" Operation. C. N. Pease, Chicago.—p. 149.
Treatment of Ganglion by Injection of Sodium Morrhuate. E. B. Kaplan, New York.—p. 151.
Teratology. A. E. Dunbar, Brooklyn.—p. 152.
Trendelenburg Operation, with Particular Reference to Its Application as a Preliminary Measure in Two Hundred and Sixty-One Cases of Extensive and Recurrent Varicose Veins Treated by the Injection Method. W. M. Cooper, New York.—p. 159.

American Journal of Syphilis and Neurology, St. Louis

18: 145-288 (April) 1934

Observations on Syphilis of the Heart, Coronary Ostia and Coronary Arteries: I. With Especial Reference to the Clinical Picture Presented by Syphilitic Stenosis of the Coronary Ostia. M. C. Pincoffs and W. S. Love Jr., Baltimore.—p. 145.
Id.: II. With Especial Reference to the Myocardial Lesions Noted in Stenosis of the Coronary Ostia. W. S. Love Jr. and C. G. Warner, Baltimore.—p. 154.
Gastric Disturbances Secondary to Syphilitic Infections. J. Friedenwald and S. Morrison, Baltimore.—p. 163.
Effect of Various Diets in Preventing Liver Damage Due to Arsphenamine. J. Beerman, Philadelphia.—p. 190.
Chancre of the Cervix. M. T. Morrison, St. Louis.—p. 196.
Studies on Sensitization of Antigen for the Wassermann Reaction. J. A. Kolmer, Carola E. Richter and Elizabeth M. Yagle, Philadelphia. —p. 204.
Acute Syphilitic Transverse Myelitis. A. M. McCausland, San Diego, Calif.—p. 216.
*General Paralysis: Nonfever Treatment by Cerebral Lipoids and Tryparsamide. E. T. Hoverson, Kankakee, Ill.—p. 221.
Superinfection (?) Following Malarial Therapy for Neurosyphilis. N. Tobias, St. Louis.—p. 232.
The Precipitation of Beef-Heart Antigen by Cerebrospinal Fluid of Neurosyphilitic Patients. B. S. Levine, Chicago.—p. 239.

Nonfever Treatment of Dementia Paralytica.—Hoverson used a preparation of cerebral lipoid prepared by the Wilson Laboratories first on six patients who were deemed unfit for fever therapy. He gave 1 cc. of the preparation intragluteally every other day until an arbitrary number of

twenty injections per person was given. No other form of antisyphilitic therapy was used. Marked mental improvement was noted in five of the patients. In order to improve the laboratory observations, tryparsamide was administered in the usual 3 Gm. dose for a period of ten weeks. This was given concurrently, before or after the lipoid medication. No marked degree of clinical improvement was observed following as small a number as ten injections. The author observed that lipoid and tryparsamide medication together will exert a greater effect in producing improvement from the laboratory point of view than either one will give alone. A gain in weight and mental improvement were noted as before with the first six patients, but in addition more striking serologic results were obtained. He has given the foregoing treatment to twenty-five patients. He found that the injection of a preparation of cerebral lipoids in conjunction with the administration of tryparsamide has given a remission rate of 48 per cent in twenty-five cases of dementia paralytica. The treatment is ambulatory and no ill effects have been experienced. This method offers a form of therapy that is applicable to all stages of central nervous system syphilis.

American Review of Tuberculosis, New York

29: 373-488 (April) 1934

*Time Interval Between Primary Infection and Superinfection as a Factor in Immunity to Tuberculosis: Experimental Study. H. Sewall, E. de Savitsch and C. P. Butler, Denver.—p. 373.

Micromotion Picture Study of the Growth of Tubercle Bacilli from Cold Blooded Animals. R. W. G. Wyckoff, New York.—p. 389.

Susceptibility of Chickens to Human and Bovine Tubercle Bacilli. W. H. Feldman, Rochester, Minn.—p. 400.

Pathologic Changes Induced in Chickens by Human and Bovine Tubercle Bacilli. W. H. Feldman, Rochester, Minn.—p. 415.

Childhood Type Tuberculosis, as Revealed by the X-Ray. H. F. R. Watts, Boston.—p. 424.

Tuberculosis in Negro Children. C. B. Gibson, Meriden, Conn.—p. 430.

*Calcified Abdominal Lymph Nodes. C. B. Gibson, Meriden, Conn.—p. 447.

Tubercle Bacilli in the Gastric Contents of Tuberculous Children: Study of Fifty-Nine Cases. Ina Gourley, Livermore, Calif.—p. 461.

Demonstration of Tubercle Bacilli in the Sputum, Feces and Stomach Contents of Tuberculous Children: Comparative Study. Lucy Mishulow, Camille Kereszturi, New York, and D. Hauptman, Brooklyn, assisted by Mildred Melman and Marie Romano.—p. 471.

Tubercle Bacilli in the Sputum and Feces of Children Without Pulmonary Tuberculosis. J. P. Nalbant, Northville, Mich.—p. 481.

Immunity to Tuberculosis.—Sewall and his associates inoculated two groups of guinea-pigs with virulent tubercle bacilli in quantities of 0.1 and 0.01 mg., respectively. Half the animals of each group were retained as controls. In the first experiment the dose of infecting bacilli was 0.1 mg. Six guinea-pigs were superinfected with the same dose after fifty-three days, and six after seventy-four days; twelve controls received only the infecting dose. In the second experiment the infecting dose was 0.01 mg. of bacilli. A superinfecting dose of 0.1 mg. was administered to six guinea-pigs after fifty-three days, to six after seventy-four days and to six after ninety-five days. The results seem to furnish positive experimental evidence that superinfection has the power, under certain conditions, to increase fibrosis, aid in the segregation of foci of infection and actively stimulate resistance to the implantation of fresh foci of disease, if not, indeed, to cause the absorption of established foci. The results of the experiments indicate that the interval of time elapsing between infection and superinfection is a factor of paramount importance in the production of immunity.

Calcified Abdominal Lymph Nodes.—Gibson investigated 200 children with diagnoses of various forms of tuberculosis. Abdominal roentgenograms revealed calcified abdominal lymph nodes in nineteen of these patients. He is convinced that the routine use of abdominal roentgenograms in children is important not only as a diagnostic aid but also for the knowledge of tuberculogenesis that may be furnished by this procedure. A single plate may not give the desired information. Serial roentgenograms of the abdomens of children suspected of having tuberculosis should be taken over a period of years. A positive diagnosis of tuberculosis of the abdominal lymph nodes cannot be made until calcification occurs and the disease becomes demonstrable by roentgenogram.

Anatomical Record, Philadelphia

58: 321-430 (March 25) 1934

Ontogenetic History of the Mitochondria and Golgi Network of the Hepatic Cell of the Chick. A. J. Dalton, Boston.—p. 321.

Histochemical Studies on the Mammalian Kidney: I. Glomerular Elimination of Ferrocyanide in the Rabbit, and Some Related Problems. I. Gersh and E. J. Stieglitz, Chicago.—p. 349.

Id.: II. Glomerular Elimination of Uric Acid in the Rabbit. I. Gersh, Chicago.—p. 369.

Experiments on Developing Rats: I. Limits of Fetal Regeneration: Behavior of Embryonic Material in Abnormal Environments. J. S. Nicholas, New Haven, Conn.—p. 387.

Transplantation of the Adult Hypophysis into Young Salamander Larvae. R. K. Burns Jr., Rochester, Minn.—p. 415.

59: 1-134 (April 25) 1934

Amyl Acetate: A Useful Solvent for Embedding Masses. D. H. Barron, Albany, N. Y.—p. 1.

The Mitotic Index of the Thyroid Gland in Guinea-Pig and Rat. Hilda Friedman and L. Loeb, St. Louis.—p. 5.

The Early Development of the Membranous Labyrinth in Mammalian Embryos, with Especial Reference to the Endolymphatic Duct and the Utriculo-Endolymphatic Duct. B. J. Anson, Chicago.—p. 15.

Giant Cells in Omental Grafts of Whole Rabbit Embryos. A. J. Waterman, Brooklyn.—p. 27.

*An Infrahyoid Muscular Anomaly in Man. J. L. Jackson, Winnipeg, Manit.—p. 41.

Growth and Regeneration of Tissue in Frog Tadpoles Following the Administration of an Extract of the Anterior Pituitary Gland. W. E. Herrell, Charlottesville, Va.—p. 47.

Pericardial Patency and Partial Ectocardia in a New-Born Orang-Utan. C. F. De Garis, Baltimore.—p. 69.

Micromanipulative Study of Blood Capillaries. B. W. Zweifach, New York.—p. 83.

The Change in Position of the Eyeballs During Fetal Life. A. A. Zimmermann, Chicago; E. L. Armstrong, Duluth, Minn., and R. E. Scammon, Minneapolis.—p. 109.

An Infrahyoid Muscular Anomaly.—During the dissection of a male subject, aged 53 years, Jackson found an anomalous muscle 110 mm. in length, extending in the midline of the neck from the posterior aspect of the manubrium sterni to the middle of the anterior aspect of the body of the hyoid bone. It is asserted that it occurred as the result of a faulty cleavage of the undifferentiated premuscle mass in early embryonic life. In support of this statement reference is made to the comparative anatomy, comparative embryology and human embryology of the subhyoid region. An examination of the literature fails to reveal any reference to this muscle. The author suggests that it be termed Musculus sternohyoideus azygos, indicating at once its attachments and its unpaired character.

Annals of Internal Medicine, Lancaster, Pa.

7: 1201-1344 (April) 1934

Splanchnic Nerve Section in Juvenile Diabetes: I. Selection of Cases for Operation. G. de Takáts, G. K. Fenn and Ruth A. Trump, Chicago.—p. 1201.

Consideration of Gastric Ulcer-Cancer Problem: Report of Case of Ulcerating Carcinoma in Which the Gastric Acidity Changed from Normal to Anacidity While Under Observation. H. Shay and E. M. Schloss, Philadelphia.—p. 1218.

*Felty's Syndrome: Report of Case with Complete Postmortem Findings. A. E. Price and J. B. Schoenfeld, Detroit.—p. 1230.

Tuberculoma of the Spinal Cord. F. L. Jennings, Oak Terrace, Minn.—p. 1240.

Value of a Neutralization Test of Gastric Acidity in Patients with Duodenal Ulcers and So-Called Pylorospasm. J. S. Levy, Little Rock, Ark.—p. 1244.

Acquired Heart Block with Adams-Stokes Attacks Dependent on Congenital Anomaly (Persistent Ostium Primum): Report of Case with Detailed Histopathologic Study. W. M. Yater, Washington, D. C.; C. W. Barrier, Fort Worth, Texas, and P. E. McNabb, Washington, D. C.—p. 1263.

*Analgesic Effect of Hepatitis and Jaundice in Chronic Arthritis, Fibrositis and Sciatic Pain. P. S. Hench, Rochester, Minn.—p. 1278.

Calcification of the Pleura. J. Head, Chicago.—p. 1295.

"Allergic" Shock: III. From Substances Other Than Pollen and Serum. G. L. Waldbott, Detroit.—p. 1308.

Report of Two Unusual Cases of Primary Carcinoma: I. Primary Carcinoma in the Liver, with Cirrhosis of the Liver, Occurring in a Female: II. Primary Carcinoma in the Jejunum. R. Finkelstein and M. Jacobi, Brooklyn.—p. 1319.

Felty's Syndrome.—Price and Schoenfeld report a case in which the arthritic manifestations of Felty's syndrome, characterized by clinical chronicity and relative benignity of the objective features, were present. There was swelling of the involved joints with a moderate amount of interosseous atrophy and limitation of motion, without roentgenologic evidence of bone absorption or destruction. The microscopic appearance of the knee joint was not distinctive. The active inflammatory process involving the periarticular tissues and synovial mem-

brane was typical of a chronic infection. The authors conclude that the pathologic process responsible for this symptom complex (arthritis, splenomegaly and leukopenia) is not new or distinctive but probably results from a chronic infection.

Analgesic Effect of Hepatitis and Jaundice.—During the past four years Hench made observations on the effect of intercurrent intrahepatic jaundice on the chronic pain experienced by sixteen patients with chronic arthritis, fibrositis and sciatica. In two of the cases the intrahepatic jaundice apparently was not related to drugs; in fourteen it was considered to be toxic hepatitis caused by cinchophen. Coincident with the onset of jaundice, fourteen of the patients received partial or complete relief of pain for variable periods. In five of the six cases in which the joints were swollen, reduction of the swelling, sometimes complete, was noted. Five of the sixteen patients experienced complete relief of pain for from two weeks to eight months, and in one instance for seven years, after the disappearance of the jaundice. Four patients noted complete disappearance of pain with the onset of fatal hepatitis and jaundice caused by cinchophen; the analgesia persisted until death. In one case, complete relief of pain was noted only for the duration of icterus; in another case, pain disappeared completely at first, returning slightly during the latter part of the period of jaundice. Two patients had marked, although not complete, relief of pain during the period of jaundice, and for two weeks and five months, respectively after the jaundice subsided. No amelioration of pain was experienced by two patients with slight jaundice. One patient noted some relief, which later was lost, even in the presence of definite icterus. In an additional case of chronic infectious arthritis and hepatitis caused by cinchophen, without jaundice, the patient did not become jaundiced and the pain was not relieved.

Archives of Internal Medicine, Chicago

53: 481-632 (April) 1934

Infections with Pneumococcus Type III and Type VIII: Characterization of Pneumonia Caused by Pneumococcus Type III and That Associated with a Biologically Closely Related Organism, Pneumococcus Type VIII. M. Finland, Boston, and W. D. Sutliff, Chicago.—p. 481.
*Acute Streptococcus Viridans Endocarditis: Report of Four Cases, with Autopsy Observations in Two. I. W. Held and A. A. Goldbloom, New York.—p. 508.
Studies of the Blood in Normal Pregnancy: V. Conductivity, Total Base, Chloride and Acid-Base Equilibrium. W. J. Dieckmann, Chicago, and C. R. Wegner, St. Louis.—p. 527.
Id.: VI. Plasma Cholesterol in Milligrams Per Hundred Cubic Centimeters, Grams Per Kilogram and Variations in Total Amount. W. J. Dieckmann, Chicago, and C. R. Wegner, St. Louis.—p. 540.
Constancy of Iron in the Blood Plasma and Urine in Health and in Anemia. A. Marlow and F. H. L. Taylor, Boston.—p. 551.
Congestive Heart Failure: XVIII. Clinical Types of Nocturnal Dyspnea. W. G. Harrison Jr., J. A. Calhoun and T. R. Harrison, Nashville, Tenn.—p. 561.
Difference in Creatine Concentration of the Left and Right Ventricular Cardiac Muscles. D. P. Seecof, New York; C. R. Linegar and V. C. Myers, Cleveland.—p. 574.
*Thoracic Stomach: Report of Five Cases. H. W. Goodall and L. H. Hoyt, Boston.—p. 594.
Chronic Idiopathic Steatorrhea: Roentgenologic Observations. A. M. Snell and J. D. Camp, Rochester, Minn.—p. 615.

Acute Streptococcus Viridans Endocarditis.—Held and Goldbloom observed that Streptococcus viridans was the cause of four cases of acute, rapidly fatal endocarditis occurring on the basis of a previously diseased valve. This form of endocarditis is usually preceded by an acute infection. The primary infection precedes the acute endocarditis by only a few days and it may efface the symptoms of endocarditis, making the diagnosis of acute endocarditis caused by Streptococcus viridans impossible before death, as in the case in which the condition was preceded by pneumonia. In the authors' cases, the symptoms of septicemia were in the foreground. They believe that the reason the cases reported had a rapidly instead of a protractedly fatal course is that there was almost a total loss of the reactive power of the reticulo-endothelium of the endocardium. A primary factor in the nonreactive quality of the reticulo-endothelium was the immediately preceding acute infection. Because the reticulo-endothelium of the endocardium was nonreactive, local inflammatory changes were minor and destructive changes were maximal.

Thoracic Stomach: Report of Five Cases.—Goodall and Hoyt believe the condition of thoracic stomach to be fairly common. Its seeming rarity is due to the fact that cases, especially of the type in which the greater part of the stomach is below the diaphragm, have been overlooked by the roentgenologist and probably by the pathologist. The clinical symptoms are characteristic enough to permit a tentative diagnosis. Dyspnea due to slight exertion and occurring in the latter part of life as well as unmitigated gastro-intestinal symptoms with negative routine roentgen observations, are suggestive of thoracic stomach. The final diagnosis is made by the roentgenologist, and this necessitates a routine determination of the length of the esophagus in all gastro-enteric examinations. The occurrence of ulcer in the thoracic stomach cannot always be demonstrated by roentgenograms.

Archives of Ophthalmology, Chicago

11: 591-750 (April) 1934

Surgical Treatment for Iridocyclitis. A. Fuchs, Vienna, Austria.—p. 591.
Seborrheal Blepharitis: Note on the Value of Roentgen Therapy in Its Chronic Stages. S. S. Greenbaum, Philadelphia.—p. 604.
Newer Forms of Bifocals. A. Cowan, Philadelphia.—p. 611.
Orbital Lymphoma in Chronic Lymphatic Leukemia: Report of Case. M. Cohen, New York.—p. 617.
Siderosis Bulbi (Xenogenous). J. Levine, New York.—p. 625.
Ocular and Oral Pemphigus: Report of Case with Anatomic Findings in the Eyeball. R. C. Smith and E. A. Myers, Superior, Wis., and H. D. Lamb, St. Louis.—p. 635.
Neurofibroma of the Choroid. D. Freeman, Baltimore.—p. 641.
Treatment of Unilateral Cataract with Contact Glasses. M. F. Little, Hartford, Conn.—p. 646.
Paralysis of Divergence. W. H. Stokes, Omaha.—p. 651.
Ocular Changes Accompanying Disturbances of Calcium-Phosphorus Metabolism: Preliminary Study. S. N. Blackberg and A. A. Knapp, New York.—p. 665.
Popular Medieval Ophthalmology. J. J. Walsh, New York.—p. 670.
Ocular Complications of Erysipelas. J. Bellows, Chicago.—p. 678.

Archives of Otolaryngology, Chicago

19: 415-536 (April) 1934

Persistence of Apparent Sinus Pain After Multiple Operations. S. R. Skillern Jr., Philadelphia.—p. 415.
Prophylactic Mediastinotomy for Perforating Esophageal Foreign Bodies: Report of Three Unusual Cases. F. L. Lederer and L. Z. Fishman, Chicago.—p. 426.
Infection of the Petrous Bone: Rationale of Treatment and Report of a Case. E. A. Sunde, Brooklyn.—p. 436.
Local Amyloid Disease of the Upper Air Passages: Report of Five Cases. J. O. Beavis, Ann Arbor, Mich.—p. 439.
*Fatal Complications of Otitis Media, with Particular Reference to the Intracranial Lesions in a Series of Ten Thousand Autopsies. C. B. Courville and J. M. Nielsen, Los Angeles.—p. 451.
*Periarteritis Nodosa of the Temporal Bone. J. G. Druss and J. L. Maybaum, New York.—p. 502.
Diverticula of the Thoracic Portion of the Esophagus: Report of Forty-Two Cases. P. P. Vinson, Rochester, Minn.—p. 508.

Fatal Complications of Otitis Media.—Courville and Nielsen reviewed the protocols of 10,000 necropsies with special attention to the intracranial complications of otitis media and mastoiditis. The highest death rate occurs in the first year of life, when intracranial complications are inclined to be less common. In some cases otitis media is an incidental finding and plays no part in the fatal issue of the case (terminal otitis). In infections of the petrous pyramid, extradural abscess and meningitis are the most common. Thrombosis of the cavernous sinus and abscess of the temporal lobe are extremely rare, and unequivocal cases have not yet been described in the literature. The authors discuss dural infections, subdural abscess, dural fistula, the incidence, pathogenesis and consequent complications of thrombosis of the venous channels, the distribution of metastatic foci secondary to thrombosis of the lateral sinus, the chronic forms of arachnitis and their rôle in the formation of arachnoidal cysts, primary and secondary types of meningitis, otitis as a cause of encephalic abscess and retrograde extension of infection by way of the venous channels as a cause of abscesses of the parietal and frontal lobes.

Periarteritis Nodosa of the Temporal Bone.—Druss and Maybaum describe the clinical features and histologic alteration in the temporal bone in a case of periarteritis nodosa. The smaller arterioles in the bone marrow of the petrous pyramid showed changes characteristic of periarteritis nodosa in the acute stages. Some showed subintimal proliferation with narrowing of the lumens, fibrinoid necrosis of the media and adventitia and perivascular cellular infiltration, mainly of the polymorphonuclear variety. In one of the vessels in the region

of the subarcuate fossa there was a definite aneurysmal dilatation as a result of a hyaline degeneration and necrosis of the media; intimal proliferation and perivascular infiltration were also noted. Certain of the periosteal vessels, particularly about the nerves and ganglions, showed the alterations usually found in arteriosclerosis, such as thickening of the intima and reduplication of the internal elastica. Three patches of otosclerosis were noted in the labyrinthine capsule, one in the region of the oval window, the site of predilection, another in the modiolus and a third in the promontory at the outer insertion of the secondary tympanic membrane. A careful study of the blood vessels in these otosclerotic areas was made, but the characteristic changes found in periarteritis nodosa were not seen. Except for the changes that have been noted, the middle ear and labyrinth were essentially normal.

Archives of Pathology, Chicago

17: 453-606 (April) 1934

Experimental Atherosclerosis in the Rabbit Compared with Human (Coronary) Atherosclerosis. T. Leary, Boston.—p. 453.
*Abscesses of the Liver Caused by Bacteroides Funduliformis: Report of Two Cases. D. C. Beaver, J. C. Heatherne and J. W. Macy, Rochester, Minn.—p. 493.
*Isolation of Ether from Human Tissues. A. O. Gettler and H. Siegel, New York.—p. 510.
Histologic Changes in the Knee Joint with Advancing Age: Relation to Degenerative Arthritis. F. Parker Jr., C. S. Keefer, W. K. Myers and R. L. Irwin, Boston.—p. 516.
Subcutaneous Tuberculoid Lesion of Cattle: Morphologic Study. W. H. Feldman, Rochester, Minn.—p. 533.

Abscesses of the Liver Caused by Bacteroides Funduliformis.—Beaver and his associates present two cases of hepatic abscess caused by Bacteroides funduliformis. The genus Bacteroides (Bergey) comprises certain anaerobic, nonsporulating bacilli. It is probable that infections of this type are not rare and that the large intestine and the genito-urinary tract of the male seem particularly vulnerable to primary infection. In the colon, infection appears to originate principally in infected carcinomas, although the focus may be cryptic. From the primary focus, direct hematogenous dissemination may occur to the liver or the lungs, with clinically demonstrable bacteremia frequently supervening. Such infections are extremely serious and offer a grave prognosis. Their clinical syndrome is typical of an extreme degree of toxicity, with a high, remittent type of fever, chills, perspiration and weakness progressing to exhaustion. The physical signs vary with the localizations of the infection. The lesions of the liver, as the authors have observed them, have been essentially chronic granulomatous abscesses, frequently multilocular and spreading with destructive changes, necrosis of tissue and exudation. In the lungs, the lesions have appeared as small septic infarcts, patches of bronchopneumonia or small abscesses. Firm, solid, grayish or hemorrhagic nodules were found most often. The grayish areas resembled beginning caseation necrosis. Other investigators have described large putrid or gangrenous abscesses of the lungs with empyema associated with organisms of this group. Such lesions are apparently primarily pulmonic, usually the result of an aspirated infection. Guinea-pigs and rabbits are susceptible to experimental inoculation with Bacteroides funduliformis. The lesions produced were abscesses, similar in appearance to those occurring in man.

Isolation of Ether from Human Tissues.—Gettler and Siegel outline a micromethod for isolating ethyl ether from human tissues. The organs removed at necropsy are placed quickly in glass jars, sealed tightly and put in a refrigerator. When the material is ice cold, about 600 Gm. is ground up quickly, and 500 Gm. of the ground mass is mixed with 200 cc. of ice cold water and placed in a 2 liter flask. An additional 300 cc. of water and 1 cc. of liquid petrolatum are added. The mixture is distilled with steam until 200 cc. of distillate is collected. A long, well cooled condenser, the tip of which has been bent to resemble an adapter, is used. The bent tip should dip into 25 cc. of ice water contained in the receiving flask, the latter being at all times entirely surrounded by ice. The entire 200 cc. of distillate is poured through the safety tube into a modified rectification flask and 1 Gm. of granulated zinc is added. The receiving tube is surrounded by a bath of solid carbon dioxide in acetone and should contain 0.15 cc. of water, so that the ether is collected over water as a separate layer. The rectification flask is heated, an asbestos-centered wire gauze and a microburner being used. As soon as the solution begins to boil, the flame is regulated so that the liquid boils gently in the bulb for about fifteen minutes. During this time the steam must not be permitted to rise beyond half the height of the liquid. Then the flame is increased gradually so that the steam is made to rise in one minute until it passes the bend. The ether, if present, will be found unfrozen in the calibrated receiver. When the rectification is completed, the receiving tube is removed from the acetone bath, lightly stoppered and allowed to stand at room temperature until any ice in the calibrated receiving tube melts. The volume of recovered ether (upper layer) is read immediately. The authors isolated and measured ether in amounts as small as 0.06 cc. in 500 Gm. of tissue. In tissues containing from 0.3 to 0.9 cc. of ether in 500 Gm., the recovery is 83.6 per cent (average). The recovery of ether is fairly constant and can be used for estimating the amount originally present in the tissues. Determinations of the micro-boiling point served to identify the isolated liquid as ethyl ether.

Archives of Surgery, Chicago

28: 617-808 (April) 1934

Congenital Clefts of the Face and Jaws: Survey of Three Hundred and Fifty Cases in Which Operation Was Performed. H. P. Ritchie, St. Paul.—p. 617.
*Anatomic Basis for the Study of Splanchnoptosis: Paths of Visceral Descent: Preliminary Report. Agnes C. Vietor, Boston.—p. 659.
Influence of Congestion on Tuberculosis. O. R. Hyndman and H. Landt, Iowa City.—p. 684.
Surface Temperature Test in Vascular Occlusion and Vasomotor Spasm: Its Value in Relation to Sympathectomy. R. C. Shaw, Preston, England.—p. 706.
Obstructive Jaundice Due to Diffuse Contracture of the Extrahepatic Bile Ducts. H. K. Ransom and K. D. Malcolm, Ann Arbor, Mich.—p. 713.
Tumors of the Salivary Glands. J. D. Martin and D. C. Elkin, Atlanta, Ga.—p. 727.
*Experimental Bone Transplantation, with Especial Reference to the Effect of "Decalcification." R. K. Ghormley and W. G. Stuck, Rochester, Minn.—p. 742.
Cholecystitis Due to Bacillus Aerogenes-Capsulatus: Report of Case with Nine Cases from the Literature. I. Graef and M. Sturtevant, New York.—p. 771.
Acute Appendicitis: Second Report of One Thousand Consecutive Cases. E. P. Quain, Bismarck, N. D.—p. 782.
A Review of Urologic Surgery. A. J. Scholl, Los Angeles; E. S. Judd, Rochester, Minn.; J. Verbrugge, Antwerp, Belgium; A. B. Hepler, Seattle; R. Gutierrez, New York, and V. J. O'Conor, Chicago.—p. 786.

Anatomic Basis for Splanchnoptosis.—According to Vietor, the most easily displaceable viscera are the kidneys, the stomach, the redundant portions of the colon, the liver, the lungs and the heart. When the kidneys and suprarenals are projected forward, they enter the lumbo-iliac inclined planes which furnish direct paths for descent. As the kidneys descend, they separate from the suprarenals. The intervisceral attachments elongate and make traction on the suprarenals. The latter elongate but remain fixed. Traction is also made on all the structures of the hili. The distending stomach normally finds a descending oblique plane which guides it downward, forward and to the right. The fundus remains under the left vault of the diaphragm. The movable part of the first portion of the duodenum shares in the movements of the antrum, and it may undergo traction, pressure, kinking, torsion or obstruction. The spleen tends to descend with the stomach and elongate, its lowest portion becoming tongue shaped and extending downward and forward on the splenic flexure. The transverse colon is always more or less redundant, forming one or more loops. When the loops are unfolded, they tend to descend, to exert traction on their attachments and to cause kinking and stasis at their angles. The liver remains under the right vault of the diaphragm. It is subject to forward, backward and lateral rotations, however, within the limits of its attachments. When the traction exceeds the limitations, the tissues of the attachments yield, and the liver becomes wholly or partially elongated or otherwise modified in shape. The lungs always remain attached at their hili but descend by elongation or by other changes in shape, as the thorax shares in the changes in body form and in the altered action of the diaphragm due to ptosis. The heart, owing to the pericardium and the other firm mediastinal tissues, remains attached to the structures at

the base. However, it tends to rotate downward and from left to right toward the median line, the apex leading. The portion of the heart to the right of the median line also moves mediad.

Experimental Bone Transplantation and Effect of Decalcification.—Ghormley and Stuck studied the rate and the type of healing of grafts taken from bone of different regions and structures and the effect on the rate and the type of healing that could be produced by "decalcification" of experimental animals. Their experiments revealed that periosteal transplants in old animals do not produce new bone. Cortical transplants do not completely die but unite slowly with the bone of the host, and decreased calcification is seen roentgenologically at the end of three months. Cancellous bone from the ilium or the tibia unites more rapidly and firmly than cortical bone. It gives roentgenographic evidence of increased calcification at the end of three months. Animals placed on a "decalcifying" diet until the time of the transplantation gave evidence of greater active production of new bone round both the cortical and the cancellous transplants.

Arkansas Medical Society Journal, Fort Smith

30: 245-264 (May) 1934

Antituberculosis Progress. J. D. Riley, State Sanatorium.—p. 245.
Observations on Pellagra. L. H. McDaniel, Tyronza.—p. 251.
Psychosis Due to Capudine Addiction. S. T. Rucker, Memphis, Tenn. —p. 256.

Bulletin of Neurol. Inst. of New York, Baltimore

3: 359-564 (March) 1934

*Diagnosis and Localization of Tumors of the Spinal Cord by Means of Measurements Made on X-Ray Films of Vertebrae and Correlation of Clinical and X-Ray Findings. C. A. Elsberg and C. G. Dyke, New York.—p. 359.
*Symptoms and Diagnosis of Extradural Cysts. C. A. Elsberg, C. G. Dyke and E. D. Brewer, New York.—p. 395.
Demonstration of Normal Cerebral Structures by Means of Encephalography: IV. Subarachnoid Cisterns and Their Contents. C. G. Dyke and L. M. Davidoff, New York.—p. 418.
Intermittent Obstruction of the Foramen of Monro by Neuro-Epithelial Cysts of the Third Ventricle: Symptoms, Diagnosis and Treatment. B. Stookey, New York.—p. 446.
A Note Concerning the Syndrome of Cauda Equina Radiculitis. F. Cramer, New York.—p. 501.
A Note on the Occurrence and Significance of Air in the Subdural Space After Encephalography. F. Cramer, New York.—p. 506.
*Nitrite of Amyl Test for Differentiation of Tumors of the Brain from Vascular and Chronic Inflammatory Lesions: Preliminary Report. C. C. Hare, New York.—p. 513.
Etiology of Headache: I. Headache Produced by Injection of Air for Encephalography. C. A. Elsberg, New York, and R. W. Southerland, Brentwood, N. Y.—p. 519.
Avertin as a Basal Anesthetic for Craniotomy. L. M. Davidoff, New York.—p. 544.
Parasagittal Gliomas: Report of Four Cases. C. B. Masson, New York.—p. 546.

Localization of Tumors of the Spinal Cord.—Elsberg and Dyke examined the roentgenograms of 100 normal spines and the roentgenograms of eighty-six patients in whom the diagnosis of intradural or extradural tumors of the spinal cord had been verified. In addition, the roentgenograms of a number of patients with intramedullary growths, syringomyelia and other intramedullary diseases which had produced a localized enlargement of the spinal cord and a series of patients in whom, at operation, adhesions of the arachnoid were found as the only grossly visible lesion were studied. Measurements were made of the size of the vertebral canal in fractures of the vertebrae. The study showed that in tumors of the spinal cord there is often an increase in the size of the vertebral canal at the level of the growth, which can be recognized only by measurements of the space between the pedicles. This enlargement of the canal was found in 42 per cent of sixty-seven cases and was especially frequent in tumors between the tenth thoracic and the sixth lumbar vertebra. The cases of extramedullary tumor showed the increase in the size of the canal in 18 per cent of growths in the cervical and upper thoracic regions, in 12 per cent of growths between the fourth and the ninth thoracic vertebra, and in 60 per cent of growths below the level of the ninth thoracic vertebra. The enlargement of the vertebral canal occurred in fourteen of nineteen cases of extradural tumor. In nine of these, other changes were recognized in the bone which made diagnosis possible; in five the nature and location of the lesion could be demonstrated only by the measurements of the interpedicular spaces of the vertebrae. In the midthoracic region, a pathologic increase in the size of the vertebral canal was much more frequent in the cases in which the expanding lesion was extradural. At the level of the tumor the inner borders of the vertebral pedicles were often flat and sometimes concave. This was of diagnostic significance only when associated with a measurable increase above the normal in the size of the interpedicular space.

Symptoms and Diagnosis of Extradural Cysts.—According to Elsberg and his associates the characteristic syndrome of compression of the spinal cord by an extradural cyst consists of the following: The individual is an adolescent presenting the history and symptoms of a progressive spastic paraplegia. Pain is absent or is not a prominent symptom. The objective disturbances of sensibility are slight and their upper level is in the midthoracic region, usually at the sixth or seventh thoracic dermatome. The manometric tests demonstrate a subarachnoid block with the characteristic spinal fluid changes of cord compression. Measurements on anteroposterior roentgenograms show that the interpedicular spaces of three or more vertebrae somewhere between the fourth and the tenth thoracic vertebra are enlarged. The pedicles of the affected vertebrae, especially those of the sixth, seventh and eighth, are narrowed and atrophic. This combination of symptoms and signs with the characteristic changes in the bony part of the spine justify the diagnosis of large extradural cyst.

Amyl Nitrite Test for the Differentiation of Tumors.—Hare used the amyl nitrite test in eighteen cases of tumor of the brain, in twenty-two cases of vascular lesions, in eighteen cases of chronic inflammatory disease and in approximately fifty persons who showed no evidence of organic disease of the brain. In sixteen of the cases of tumor of the brain the rise of the fluid in the manometer varied between 330 and 520 mm. In several cases the spinal fluid was forced out of the top of the manometer tube. In two cases the level of the fluid rose to 260 and 270 mm. Necropsy several months later revealed cerebral tumors with extensive cerebral softening in both cases. In nineteen cases of cerebral arteriosclerosis or marked vascular lesions, the inhalation of amyl nitrite by the patient caused a rise of spinal pressure to between 130 and 315 mm. In three patients, two of whom were suffering from a high degree of hypertension, the rise was to 455, 400 and 360 mm., respectively. In sixteen of the patients presenting inflammatory lesions, mostly cases of chronic encephalitis or syphilis, the rise varied between 85 and 320 mm. In two cases of arterial hypertension superimposed on the inflammatory disease the fluid mounted to a level of 360 and 400 mm., respectively. The pressure readings for the majority of the control group were about equally distributed slightly above and below the 320 mm. level. From these results the author concludes that the amyl nitrite test is of value as a diagnostic aid in differentiating between expanding lesions and inflammatory or vascular diseases of the brain and that it is not of value as a method of differential diagnosis between pathologic and normal conditions in the brain.

California and Western Medicine, San Francisco

40: 217-320 (April) 1934

Practical Observations Based on Eight Hundred Thyroidectomies. A. B. Cooke, Los Angeles.—p. 217.
Malpractice: As an Attorney Sees It. R. E. Swing, San Bernardino. —p. 221.
Subphrenic Abscess. H. B. Stephens and E. Rouff, San Francisco.—p. 224.
*Chronic Sinus Infection: New Method for Its Treatment. F. C. Kracaw, Oakland.—p. 228.
Minor Back Injuries. T. E. P. Gocher, San Francisco.—p. 234.
Anorectal Fistulas: Advances in the Treatment. M. S. Woolf, San Francisco.—p. 238.
Injuries of the Intra-Abdominal Hollow Viscera. E. Butler, San Francisco.—p. 242.
Compulsory Health Insurance. F. L. Hoffman, Philadelphia.—p. 245.

Chronic Sinus Infection.—Kracaw employed topical and general administrations of autogenous endo-antigens, prepared according to the method of Krueger, in the treatment of chronic and subacute sinus infections. This procedure apparently results in an increased ability of the host's tissues to handle the infecting agent. The tissue response is largely phagocytic in nature. It is not possible to employ a fixed scale of dosage: individual

variations in tolerance are considerable, although the author did not observe untoward reactions in his series of forty-five cases. His analysis of the end results in the forty-five cases treated by this method shows satisfactory improvement in 95 per cent and marked improvement or cure in 66 per cent. He has started treatment with the weaker solution, administering the antigen hypodermically three times a week, the first dose being 0.1 cc. intradermally and 0.1 cc. subcutaneously. It has been found more satisfactory to make these injections in two separate areas, 2 or 3 inches apart. The intradermal dose remains the same throughout the treatment, while the subcutaneous dose is raised as rapidly as possible to the maximum, usually from 0.5 to 0.8 cc., four or five maximal doses of the weaker solution being given. Care should be exercised always to remain just below the reaction dosage. Reactions are rarely encountered and are never severe, but the author feels that treatment is more satisfactory when they are avoided. The stronger solution is used now and the same procedure is followed. The entire course requires from ten to fourteen weeks for completion.

Canadian Public Health Journal, Toronto

25: 103-154 (March) 1934

A Five Year Survey of Maternal Mortality in Manitoba, 1928-1932. F. W. Jackson, Winnipeg, Manit.; R. D. Defries and A. H. Sellers, Toronto.—p. 103.
Municipal Health Expenditures in Canada. R. B. Jenkins, Edmonton, Alta.—p. 120.
Laboratory and Field Methods for the Detection of Mastitis: Part I. J. M. Rosell, Montreal.—p. 124.
Sanitation in Carbonated Beverage Bottling Plants. G. A. H. Burn, Toronto.—p. 131.
Diagnosis of Early Thoracic Tuberculosis in Children. H. I. Kinsey, Toronto.—p. 135.

Florida Medical Association Journal, Jacksonville

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Hypothyroidism in the Adolescent Girl, with Particular Reference to Social Delinquents. T. Z. Cason, Jacksonville.—p. 437.
A State Health Department's Service to the Medical Profession. H. Hanson, Jacksonville.—p. 442.
Elliott Treatment of Pelvic Inflammations. B. Manhoff, Jacksonville.—p. 446.
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Illinois Medical Journal, Chicago

65: 281-376 (April) 1934

Peridural Anesthesia in Abdominal Surgery. J. R. Harger, Chicago.—p. 317.
Ocular Signs and Findings in Exophthalmic Goiter. E. Selinger, Chicago.—p. 319.
Some of the Essentials in the Diagnosis and Treatment of Urgent Acute Appendicitis. E. S. Murphy, Dixon.—p. 325.
Stuttering: Its Nature and Mechanism. M. Solomon, Chicago.—p. 329.
Multiple Myeloma. G. B. Stricker, Springfield.—p. 335.
Traumatic Cataract: Its Medicolegal Aspect. J. Shanks, Chicago.—p. 338.
The Irritable Colon. H. P. Miller, Rock Island.—p. 340.
A New Type of Retention Catheter. J. M. Greene and E. I. Greene, Chicago.—p. 344.
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The Young Physician. W. A. N. Dorland, Chicago.—p. 348.
An Overlooked Factor in Susceptibility to the Common Cold. A. E. Ewens, Atlantic City, N. J.—p. 352.
Primary Actinomycosis of the Parotid Gland. J. T. Hart and C. White, Chicago.—p. 355.
Induced Insanity: Report of Cases. C. H. Anderson, Moline.—p. 357.
Organic Esophageal Stenosis. M. A. Glatt, Chicago.—p. 358.
Treatment of Gonorrheal Infections with Neovonargen Intravenously Administered. J. E. F. Laibe, Chicago.—p. 363.
Viosterol in Pregnancy: Review of Three Hundred Cases. G. C. Richardson, Chicago.—p. 367.
Postoperative Diathermy in Prostatectomy. C. O. Ritch, Chicago.—p. 370.

Indiana State Medical Assn. Journal, Indianapolis

27: 143-192 (April 1) 1934

The Pediatrician and the Otolaryngologist. J. C. Carter, Indianapolis.—p. 143.
Aseptic Treatment of Primary Wounds. F. H. Jett, Terre Haute.—p. 147.
Selective Autogenous Vaccine in the Treatment of Bronchial Asthma: Preliminary Report. H. M. Banks and T. J. Beasley, Indianapolis.—p. 151.
Childhood Tuberculosis. Marion J. Alexander, Louisville, Ky.—p. 156.
Lymphogranulomatosis Inguinalis. J. E. Dalton, Indianapolis.—p. 158.
Economic Prospect for the Physician. N. B. Van Etten, New York.—p. 160.

Iowa State Medical Society Journal, Des Moines

24: 173-228 (April) 1934

Intrathoracic Tumors: Report of Five Cases and Review of Literature. W. D. Remyon and M. C. Wheelock, Sioux City.—p. 184.
Thymic Disturbances in Children. G. E. Harrison, Mason City.—p. 188.
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Diagnosis and Treatment of Trigeminal Neuralgia. W. D. Abbott, Des Moines.—p. 193.
Simple Method for Apothecary Metric Transcription. M. A. Bridges, New York.—p. 197.
Tuberculosis in Infancy. A. M. Smythe, Des Moines.—p. 200.
Hernia of Jejunum Through an Aperture in the Mesentery of the Small Intestine. S. W. Barnett, Cedar Falls.—p. 202.

Johns Hopkins Hospital Bulletin, Baltimore

54: 211-314 (April) 1934

Studies on the Adrenal: IV. The Oral Administration of the Adrenal Cortical Hormone and the Use of Fresh Glands Therapeutically. A. Grollman and W. M. Firor, Baltimore.—p. 216.
Sino-Auricular Block with Ventricular Escape. F. W. Light Jr., Reading, Pa.—p. 225.
*Relation of Allergy to Immunity in Tuberculosis. H. Rothschild, J. S. Friedenwald and C. Bernstein, Baltimore.—p. 232.
Study of Character and Degree of Protection Afforded by the Immune State Independently of the Leukocytes. A. R. Rich and Clara M. McKee, Baltimore.—p. 277.

Relation of Allergy to Immunity in Tuberculosis.—Rothschild and his associates obtained complete desensitization to tubercle bacilli and to tuberculin in tuberculous guinea-pigs by a prolonged and properly graded course of subcutaneous injections of Koch's old tuberculin. The desensitizing power of purified tuberculoprotein is less in proportion to its power to produce allergic reactions than is that of Koch's old tuberculin. Long continued daily subcutaneous injections of massive doses of concentrated glycerin broth in some instances desensitize tuberculous guinea-pigs to tuberculin. This nonspecific desensitization is not due to the glycerin contained in the broth. It is not known whether this nonspecific desensitization is free from the danger of perifocal reaction. Infection in desensitized immune animals does not introduce into the histologic picture of tuberculous lesions features that are novel to the pathologic condition of human tuberculosis. In these respects the reaction of the desensitized animals was equal or superior to that of the nondesensitized controls. So far as the inhibition of spread of lesions from the site of infection to the viscera may be used as evidence of local fixation of bacilli, the desensitized, nonallergic immunes were able to resist the spread of infection as successfully as the allergic immunes.

Journal of Biological Chemistry, Baltimore

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Sexual Variation in Carbohydrate Metabolism: IV. Effect of Ovariectomy and Theelin Administration on the Glycogen Content of Rats. Margaret Gulick, L. T. Samuels and H. J. Deuel Jr., Los Angeles.—p. 29.
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Influence of Fluorine Ingestion on Nutritional Qualities of Milk. P. H. Phillips, E. B. Hart and G. Borstedt, Madison, Wis.—p. 123.
Chemistry of the Coffee Bean: II. Composition of the Glycerides of the Coffee Bean Oil. R. O. Bengis and R. J. Anderson, New Haven, Conn.—p. 139.
Fat-Soluble Vitamins: XXXIX. Influence of Breed and Diet of Cows on the Carotene and Vitamin A Content of Butter. C. A. Baumann, H. Steenbock, W. M. Berson and I. W. Rupel, Madison, Wis.—p. 167.
Method for Quick Dry Ashing of Blood Serum for Determination of Sodium by Uranyl Zinc Acetate Method. W. E. Wilkins, Nashville, Tenn.—p. 177.
Inorganic Salts in Nutrition: VIII. Variations in Proportion of Reticulocytes in Blood of Rats Receiving a Diet Deficient in Inorganic Salts. J. M. Orten and A. H. Smith, New Haven, Conn.—p. 181.
Investigation of a Method for Iron Determination in Blood. B. R. Burmester, Berkeley, Calif.—p. 189.
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Id.: II. Influence of Hydrogen Ion Concentration on Activity of Liver Esterase. H. Sobotka and D. Glick, New York.—p. 221.

Journal of Comparative Neurology, Philadelphia

50: 175-340 (April 15) 1934

Function of the Brain in Olfaction: II. Results of Destruction of Olfactory and Other Nervous Structures on the Discrimination of Odors. H. G. Swann, Chicago.—p. 175.

Relation of Taste Buds to Their Nerve Fibers. T. W. Torrey, Boston.—p. 203.

Further Experimental Studies on Innervation of Striated Muscle. H. J. Wilkinson, Adelaide, Australia.—p. 221.

The Amphibian Forebrain: X. Localized Functions and Integrating Functions. C. J. Herrick, Chicago.—p. 239.

Effect of Stimulation on Celiac Ganglion Cells of the Albino Rat. E. H. Ingersoll, Richmond, Va.—p. 267.

Motor Nerves of the Eye in Albino and Gray Norway Rats. E. McCrady Jr., Philadelphia.—p. 285.

Results of Peripheral Anastomoses Between the Fore and Hind Limb Nerves of Albino Rats. D. H. Barron, New Haven, Conn.—p. 301.

Frequency of Atypical Neurons in Spinal Ganglions Under Normal Conditions and After Lesions of the Roots, Nerves or Ganglions. R. W. Barris, Chicago.—p. 325.

Journal of Experimental Medicine, New York

59: 393-528 (April 1) 1934

*The Filtering Capacity of Lymph Nodes. C. K. Drinker, Madeleine E. Field and H. K. Ward, Boston.—p. 393.

I. Cholesterol and Cholesterol Esters in Dog Bile: Quantitative Methods. A. Wright, Rochester, N. Y.—p. 407.

II. Bile Cholesterol: Fluctuations Due to Diet Factors, Bile Salt, Liver Injury and Hemolysis. A. Wright and G. H. Whipple, Rochester, N. Y.—p. 411.

III. Blood Plasma Cholesterol: Fluctuations Due to Liver Injury and Bile Duct Obstruction. W. B. Hawkins and A. Wright, Rochester, N. Y.—p. 427.

Serologic Differentiation of Specific Types of Bovine Hemolytic Streptococci (Group B). Rebecca C. Lancefield, New York.—p. 441.

Loss of Properties of Hemolysin and Pigment Formation Without Change in Immunologic Specificity in a Strain of Streptococcus Haemolyticus. Rebecca C. Lancefield, New York.—p. 459.

*Studies on Typhus Fever: XII. Passive Immunization of Guinea-Pigs, Infected with European Virus, with Serum of a Horse Treated with Killed Rickettsia of the Mexican Type. H. Zinsser and M. Ruiz Castaneda, Boston.—p. 471.

Use of Adsorbents in Immunizations with Haptens. J. Jacobs, New York.—p. 479.

Viable Leishmania Donovani in Nasal and Oral Secretions of Patients with Kala-Azar and Bearing of This Finding on the Transmission of the Disease. C. E. Forkner and Lily S. Zia, Peiping, China.—p. 491.

Lymphomatosis, Myelomatosis and Endotheliona of Chickens Caused by a Filtrable Agent: II. Morphologic Characteristics of the Endotheliomas Caused by This Agent. J. Furth, New York.—p. 501.

Quantitative Studies on Precipitin Reaction: Rôle of Multiple Reactive Groups in Antigen-Antibody Union as Illustrated by an Instance of Cross-Precipitation. M. Heidelberger and F. E. Kendall, New York.—p. 519.

Filtering Capacity of Lymph Nodes.—Drinker and his associates, using a series of anesthetized dogs, perfused the popliteal lymph node alone and the popliteal and iliac lymph nodes with solutions containing dog erythrocytes and streptococci. The perfusions have been carried out under conditions of lymph flow and pressure within the limits of those occurring in the actively moving dog, or after a severe degree of inflammatory swelling has developed. The study indicates that normal lymph nodes possess a high degree of filtering efficiency—an efficiency so great as to make it fairly certain that in a part kept at rest early in an infection practically no microorganisms would escape the nodes in the line of drainage.

Studies on Typhus Fever.—The experiments of Zinsser and Ruiz Castaneda demonstrate that under suitable experimental conditions guinea-pigs can be protected from infection with the European type of virus by the serum of a horse immunized with killed rickettsiae of the Mexican type. These results seem to them to bear on the differences of opinion that exist concerning the closeness of the relation between the two types of virus. It is their opinion that the differences are much less fundamental than they have been supposed to be and that it is not impossible that they depend largely on minor modifications (adaptations, possibly reversible) sustained in the course of the passage of the Mexican, so-called New World, virus through rats and rat fleas. The results of these experiments show beyond question that the serum of a horse treated entirely with Mexican rickettsiae acquires a Weil-Felix reaction, agglutinates the European louse vaccines of Weigl and protects against the European virus. The results support the view that closely relates these two infectious agents. These results are of importance with regard to the development of a protective serum for prophylactic and therapeutic application to the European disease, because, in the past, it has not been possible to obtain, with the European virus, anything like the large accumulations of rickettsiae that the authors have been able to produce with the Mexican strain by their roentgen method.

Journal of Nutrition, Philadelphia

7: 367-480 (April 10) 1934

Effect of Heat on Biologic Value of Meat Protein. Agnes Fay Morgan and Grace E. Kern, Berkeley, Calif.—p. 367.

*Influence of Roughage on Protein Digestibility. W. H. Adolph and M.-Y. Wu, Peiping, China.—p. 381.

Biologic Availability of Soybean Carbohydrate. W. H. Adolph and H.-C. Kao, Peiping, China.—p. 395.

Effect of Thyroidectomy and Thyroid Feeding on Milk Secretion and Milk Fat Production of Cows. W. R. Graham Jr., Guelph, Ont.—p. 407.

Comparative Study of Specific Dynamic Action of the Amino-Acids Alanine and Glycine. C. M. Wilhelmj, Omaha.—p. 431.

Neurologic Disturbances in Rats Reared on Diets Deficient in Vitamin A. S. B. D. Aberle, New Haven, Conn.—p. 445.

Relation Between the Physical Character of Food and Dental Caries in Albino Rats. C. A. Lilly and Leona Wiley, Ann Arbor, Mich.—p. 463.

Analyses of Meats. V. A. Toscani, V. R. Rupp and W. S. McClellan, New York.—p. 473.

Influence of Roughage on Protein Digestibility.—Adolph and Wu fed rats different amounts of filter paper, china clay and rice chaff with a cooked rice diet. The results indicate that neither varying the total amount of food nor adding large amounts of these bulk materials produces any significant effect on the degree of digestibility of the food protein. China clay was fed in amounts up to 80 per cent of the total intake. It would appear that great bulk in the alimentary canal does not interfere with the action of proteolytic enzymes. Agar-agar caused a rapid passage of the food material through the alimentary tract and showed distinctly lowered values for protein digestibility. An experiment with two human subjects in which cabbage fiber was fed with a meat-rice diet showed a slight tendency toward a lowered degree of protein digestibility only when the fiber was ingested in an abnormally large amount. The authors believe that lowered values for nitrogen digestibility on a given diet result only when the food material passes through the alimentary tract with unusual rapidity.

Journal of Pharmacology & Exper. Therap., Baltimore

50: 347-450 (April) 1934

Sodium Salt of C-C-Cyclohexenylmethyl-N-Methyl Barbituric Acid (Evipan) Anesthesia in Laboratory Animals. W. P. Kennedy, Edinburgh, Scotland.—p. 347.

Circulatory Responses to Acetylcholine in Normal Dogs and in Dogs with Experimental Aortic Regurgitation. I. Brotman, G. Brewer and W. F. Hamilton, Washington, D. C.—p. 354.

Action of Mescaline and Some Related Compounds. G. S. Grace, Oxford, England.—p. 359.

Comparative Absorption of Certain Salicylate Esters by the Human Skin. E. W. Brown and W. O. Scott, Edgewood, Md.—p. 373.

Action of the Enzymes of the Venom of Crotalus Adamanteus on the Proteins of Blood and Milk. E. E. Dunn, Cincinnati.—p. 386.

Separation of the Enzymes and Toxic Principles of the Venom of Crotalus Adamanteus. E. E. Dunn, Cincinnati.—p. 393.

Physiologic Action of Tolylendiamine and Its Relation to Experimental Jaundice. H. J. Wolff, Rochester, Minn.—p. 407.

Observations Regarding the Mechanism of Gastro-Intestinal Inhibition by Barbituric Acid Compounds. J. P. Quigley and K. R. Phelps, Cleveland.—p. 420.

*Correlation of Visceral and Somatic Activity Following Administration of Hypnotics (A) Barbital Compounds and (B) Tribrom-Ethanol (Avertin Crystals and Fluid). J. P. Quigley, O. W. Barlow and C. K. Himmelsbach, Cleveland.—p. 425.

Visceral and Somatic Activity Following Use of Hypnotics.—Quigley and his associates studied the effect of a range of doses of pentobarbital, amytal and barbital administered intravenously on the tone and motility of the stomach, ileum and colon by the balloon method in trained, unanesthetized dogs. The action of barbital has been checked by direct observations using the paraffin bath method. The visceral response has been correlated with the hypnotic action of these compounds. Motor activity of the intestine was depressed in a qualitatively similar manner by each of the barbitals. Maximal depression frequently developed most rapidly in the colon and last in the stomach; complete recovery usually occurred early in the ileum and late in the stomach. With doses of the barbiturates producing equal degrees of hypnosis, gastro-intestinal depression was longest with barbital, intermediate with amytal and shortest

with pentobarbital. Excitation from barbital and pentobarbital was more frequent with small than with moderate dosages. The maximal dose of amytal produced marked restlessness. The frequency with which excitement or restlessness was observed was greatest with amytal and least with pentobarbital. Dosages of tribrom-ethanol having a slight hypnotic action markedly depressed the gastro-intestinal tract (order of depression, stomach, ileum, colon), but the visceral effects persisted only from 0.6 to 0.8 time as long as the period of hypnosis. The somatic depression produced by tribrom-ethanol fluid exceeded that from tribrom-ethanol crystals, in that the maximal effects of the fluid developed somewhat earlier, were of greater degree and persisted from one and one-half to two times as long as with the crystals. This indicated that the rate of absorption of an aqueous solution of tribrom-ethanol fluid from the dog's colon equaled or exceeded that of a similar solution of the crystals. The amylene hydrate contained in the fluid may have produced a moderate irritation of the colon.

Journal of Urology, Baltimore

31: 423-606 (April) 1934

Cancer of the Bladder: Study Based on Nine Hundred and Two Epithelial Tumors of the Bladder in the Carcinoma Registry of the American Urological Association. The Committee on Carcinoma Registry: H. L. Kretschmer, Chicago, Chairman; B. S. Barringer, New York; W. F. Braasch, Rochester, Minn.; A. L. Dean, R. S. Ferguson and E. L. Keyes, New York, and G. G. Smith, Boston.—p. 423.
Diverticulum of the Ureter. R. L. Davis, San Antonio, Texas.—p. 473.
Unusually Large Renal Calculus and Ureteral Calculi with Marked Calcium Deposits in Other Organs. G. H. Ewell, Madison, Wis.—p. 487.
Clinical and Pathologic Study of Congenital Obstruction of the Urethra: Report of Four Cases. O. S. Lowsley and T. J. Kirwin, New York.—p. 497.
Gangrene of the Bladder: Review of Two Hundred and Seven Cases: Report of Two Personal Cases. W. C. Stirling and G. A. Hopkins, Washington, D. C.—p. 517.
*Thrombosis of the Renal Veins. A. B. Hepler, Seattle.—p. 527.
Gas Bacillus Infections in Urology. A. E. Goldstein and B. S. Abeshouse, Baltimore.—p. 547.
Typhoid Pyonephrosis: Its Urologic and Public Health Significance. C. B. Huggins and N. W. Roome, Chicago.—p. 587.

Thrombosis of the Renal Veins.—Hepler reports two cases of thrombosis of the renal veins. One represents a postscarlatinal thrombosis of the vena cava that evidently existed for some time with the establishment of a collateral circulation. Visceral involvement was late and started as a hemorrhagic infarction of the left kidney from a secondary thrombus in the left renal vein. Recovery after removal of the left kidney was prevented by a secondary thrombosis of the right renal vein ten days later. However, the marked improvement following nephrectomy indicates the feasibility of surgical intervention even in the presence of extensive extrarenal thromboses if the condition is unilateral, as it is in half of the reported cases, and the infarction is not overshadowed by the primary or associated disease. The fact that this lesion presents a definite syndrome, consisting of sudden onset of hematuria, lumbar pain and tenderness and rapid, progressive enlargement of the kidney, should ensure its more frequent clinical recognition. With this presumptive evidence the additional cystoscopic observations of unilateral bleeding, reduced or absent function and an enlarged outline of the kidney, with no shadows on excretory urography, are diagnostic. The condition is not uncommon in infants, in whom it is usually primary and associated with severe enteritis overshadowing the infarction, as it did in the author's other case, and precluding the possibility of surgical intervention. In these cases, at the time of total infarction of one kidney there is frequently a beginning capillary thrombosis on the opposite side. In older children and adults the thrombosis is usually secondary and unilateral. Although practically all thrombi arise on the basis of infection, suppurative thrombophlebitis is rare in infants. It usually occurs between the ages of 25 and 50 years and is secondary to severe suppurative lesions of the kidney, either hematogenous or ascending. In the surgical treatment of pyogenic infections of the kidney, the possibility of an infected thrombus in the renal vein as a continued source of blood stream infection must be considered.

Maine Medical Journal, Portland

25: 63-84 (April) 1934

Significance of Childhood Type of Tuberculosis. E. A. Greco, Portland.—p. 68.
Undulant Fever. A. B. Libby, Gardiner.—p. 72.

New England Journal of Medicine, Boston

210: 781-830 (April 12) 1934

Hernia of the Diaphragm: Esophageal Type in Adults. P. E. Truesdale, Fall River, Mass.—p. 781.
Hereditary Ectodermal Dysplasia of the Anhidrotic Type: Case Report. J. M. Hiebert, Nutley, N. J., and J. Garland, Boston.—p. 784.
Hydronephrosis Due to Subepithelial Fibrosis: Treatment by an Adaptation of Rammstedt's Technic. S. N. Vose, Boston.—p. 786.
Local Anesthesia in Obstetrics. C. T. O'Connor, Boston.—p. 788.
Rigid Flatfoot: Remodeling. F. J. Cotton and G. M. Morrison, Boston.—p. 792.
Separate Ossification Center for the Internal Malleolus. A. P. Aitken, Boston.—p. 793.
Salyrgan: Its Long-Continued Use in Cardiac Insufficiency with Latent Edema. I. M. Dixson, Stockbridge, Mass.—p. 800.
History of Lead Poisoning in Boston: Note. R. Fitz, Boston.—p. 802.
Intracranial Lesions. G. Horrax, Boston.—p. 806.

210: 831-882 (April 19) 1934

Cancer of the Breast: End Results Massachusetts General Hospital 1921, 1922 and 1923. R. B. Greenough and G. W. Taylor, Boston.—p. 831.
Id.: End Results Massachusetts General Hospital 1924, 1925 and 1926. C. C. Simmons, G. W. Taylor and R. H. Wallace, Boston.—p. 836.
Observations on the Problem of Maternal Mortality. E. S. Brackett, Providence, R. I.—p. 845.
Health Insurance in England. H. B. Brackenbury, London, England.—p. 851.
*Snapping Thumb in Childhood: Report of Eight Cases. H. W. Hudson Jr., Boston.—p. 854.
Strangulated Inguinal Hernia, with Unusual Complications, in an Infant of Five Weeks: Report of Case. J. L. Golden, Medford, Mass., and H. H. Hamilton, Malden, Mass.—p. 857.
The Mechanism of a Sprained Ankle. A. P. Aitken, Boston.—p. 858.
A Comfortable Breast Swathe. E. M. Daland, Boston.—p. 859.
The Heel Shifting Operation for Flat Feet and Others. F. J. Cotton, Boston.—p. 860.

Snapping Thumb in Childhood.—In contradistinction to the usual statements regarding age, sex and cause of the snapping thumb in childhood, Hudson offers eight cases (two bilateral) seen within two years, all occurring at the age of 3 or earlier, with no distinctive sex incidence. The same etiologic factor, localized tendon enlargement leading to disproportion between the tendon and its sheath, was present and the flexor pollicis longus was affected in each case. In only one instance was there a definite history of trauma and in no instance had the fingers or hand been used in an abnormal fashion. In one case a familial incidence was recorded. Six of the eight cases, including both the bilateral instances, were proved by operation.

New Orleans Medical and Surgical Journal

86: 651-714 (April) 1934

Transurethral Resection of Prostatic Bars, Hypertrophies and Cancer. E. G. Ballenger, O. F. Elder and H. P. McDonald, Atlanta, Ga.—p. 651.
Treatment of Menstrual Disorders by Hormone Therapy: Report of Thirty Cases. J. T. Witherspoon, New Orleans.—p. 659.
Therapeutic Paradox: Case Report. M. K. King, Savannah, Ga.—p. 664.
Trees for Street Ornamentation. N. F. Thiberge, New Orleans.—p. 666.
Law of Negligence and Malpractice as Applied to Physicians. T. P. Brady, Brookhaven, Miss.—p. 670.
Hypothyroidism. W. H. Brandon, Clarksdale, Miss.—p. 675.

Northwest Medicine, Seattle

33: 113-150 (April) 1934

Sleep and Its Disorders. A. T. Mathers, Winnipeg, Manit.—p. 115.
Diabetes Mellitus: Outline of Its Treatment. C. H. Holrichter, Seattle.—p. 119.
*Insulin in Diabetes Mellitus: Effect of Diet on Its Dose. R. Holcomb, Portland, Ore.—p. 121.
Dysinsulinism: Glucose Tolerance Tests in Irritable Colon. J. C. Brougher, Vancouver, Wash.—p. 125.
Surgery of the Colon and Sigmoid. C. T. Sweeney, Medford, Ore.—p. 128.
Social Hygiene, Venereal Disease and Economics: A Ten Year Study of Their Interrelation in Washington. W. R. Jones, Seattle.—p. 131.
Active Immunization Against Diphtheria, Using Commercial Alum Precipitated Toxoid: Report of Two Hundred and Fifteen Cases. F. J. Kenny, Edmonds, Wash.—p. 136.

Insulin in Diabetes Mellitus.—Holcomb determined the insulin requirements of forty-three diabetic patients on various diets. His observations reveal rather definite evidence that

the insulin requirement is dependent not alone on the grams of carbohydrate in the diet but also on the fat and all other elements entering into the metabolism. There is no constant scale of insulin dosage for a given quantity of carbohydrate in the diet. The ratio between grams of dextrose and units of insulin varies widely, not only in different patients but also in the same patient under various conditions of health and activity. The total calories of the diet more nearly determine the insulin dose than does the total dextrose, and the so-called dextrose equivalent of insulin varies too widely to be recognized as a useful constant factor in determining insulin dosage in diabetes.

Ohio State Medical Journal, Columbus

30: 193-272 (April 1) 1934

Syringomyelia and Syringobulbia. E. Scott, H. LeFever and Mary Oliver, Columbus.—p. 213.
Hypermature Cataract: Its Prognosis and Treatment. D. T. Vail Jr., Cincinnati.—p. 223.
Clinical Study of Gastro-Enteritis, with Especial Reference to Continuous Intravenous Method of Treatment. R. A. Lyon, J. G. Van Der Mark and A. G. Mitchell, Cincinnati.—p. 227.
Strangulated Inguinal Hernias in Infants. G. O. Hedlund, Painesville. —p. 234.

Psychiatric Quarterly, Albany, N. Y.

8: 227-434 (April) 1934

Narcosis and Mental Function. J. H. Quastel, Cardiff, Wales.—p. 227.
Relation of Startle Reactions to the Cardiac Cycle. C. Landis and T. W. Forbes, New York.—p. 235.
Psychogenic and Constitutional Factors in Homosexuality: Their Relation to Personality Disorders. G. W. Henry, New York.—p. 243.
Folie à Deux: Report of Several Cases. W. R. Webster, Marcy, N. Y.—p. 265.
Cerebral Metastatic Melanoma Simulating Cerebrospinal Meningitis and Encephalitis: Case. J. S. Grewal, New York, and W. E. Kelly, Middletown, N. Y.—p. 276.
A Cephalic Monster: Report of Case of an Unusually Voluminous Meningo-Encephalocele. D. T. Dubow and F. M. Kramer, New York. —p. 286.
Arm-to-Carotid Circulation Time in Normal and Schizophrenia Subjects. H. Freeman, Worcester, Mass.—p. 290.
Coexistence of Psychoses of a Different Type in the Same Individual. A. Gordon, Philadelphia.—p. 300.
Mental Treatment of Stammering. L. P. Clark, New York.—p. 306.
Organization of Psychiatric Clinics. N. D. Black, Marcy, N. Y.—p. 319.
What the Community Worker Expects from the Mental Hospital. Alice J. Webber, Syracuse, N. Y.—p. 326.
What the State Hospital Expects of the Community Social Worker. Eva M. Schied, Utica, N. Y.—p. 331.
Hereditary and Environmental Factors in the Causation of Dementia Praecox and Manic-Depressive Psychoses. H. M. Pollock, B. Malzberg and R. G. Fuller.—p. 337.

Public Health Reports, Washington, D. C.

49: 497-524 (April 20) 1934

Heart Disease: Brief Review of Etiology and Incidence, and Possibilities of Preventing the Diseases, Especially the Rheumatic Type. R. Olesen.—p. 497.
Annual Physical Examination Study at the Atlanta Federal Penitentiary. W. F. Ossenfort.—p. 508.

49: 525-554 (April 27) 1934

Standardization of Gas Gangrene (Perfringens) Antitoxin. Ida A. Bengtson.—p. 525.

Southwestern Medicine, Phoenix, Ariz.

18: 109-150 (April) 1934

Allergy: Introduction. O. H. Brown, Phoenix, Ariz.—p. 109.
Id.: Food Allergy: Résumé of Literature: Personal Observations. O. H. Brown, Phoenix, Ariz.—p. 109.
Some Practical Aspects of Brain Tumor Diagnosis. L. Stone, Topeka, Kan.—p. 115.
Childhood Tuberculosis: Discussed with Especial Reference to Preventive Measures. M. K. Wylder, Albuquerque, N. M.—p. 120.
Id.: Etiology and Diagnosis. C. V. Barley, Tucson, Ariz.—p. 123.
Id.: Public Health Problem. J. R. Earp, Santa Fe, N. M.—p. 128.
Hay Fever in Central Arizona and Its Treatment with Oral Extracts. E. A. Gatterdam, Phoenix, Ariz.—p. 130.
Intestinal Amebiasis. F. J. Milloy, Phoenix, Ariz.—p. 133.
Malpresentations and Their Management. D. Fournier, Phoenix, Ariz. —p. 137.

Tennessee State Medical Assn. Journal, Nashville

27: 65-96 (March) 1934

Birth and Death Registration in Tennessee. R. H. White, Nashville. —p. 65.
Intra-Ocular Hemorrhage. R. S. Leach, Knoxville.—p. 68.
Hypothyroidism. F. E. Marsh, Chattanooga.—p. 76.
Diet, Vitamins and Teeth. A. G. Jacobs, Memphis.—p. 78.

27: 97-138 (April) 1934

Spinal Cord Compression with Abstracts of Cases. T. D. McKinney, Nashville.—p. 97.
Analgesias in Pregnancy. W. B. Anderson, Nashville.—p. 105.
The Problem of Heart Disease. C. S. Burwell, Nashville.—p. 111.
Nonvalvular Heart Disease. W. E. Bryan, Chattanooga.—p. 116.

United States Naval Med. Bulletin, Washington, D. C.

32: 133-256 (April) 1934

X-Ray Organization and Problems in the United States Navy. I. W. Jacobs.—p. 133.
X-Ray Observations of Pneumonia Treated with Specific Antiserums. J. B. Helm, D. Ferguson and H. J. Noble.—p. 147.
Appendicitis: Plea for More and Earlier Operations. J. J. A. McMullin.—p. 152.
Human Response to Immunization with Type I Pneumococcus Vaccine. D. Ferguson.—p. 155.
Botulism. W. W. Hall and B. V. D. Scott.—p. 162.
Spinal Anesthesia: Physical and Physiologic Considerations. J. Londres.—p. 171.
Gravity Control Method of Giving Spinal Anesthesia. R. D. Joldersma. —p. 175.
Relief of Pain and Discomfort Following Tonsillectomy and Submucous Resection. F. F. Lane.—p. 179.
Congenital Abnormalities of the Kidney, Ureter and Bladder: Report of Ten Cases. M. S. Mathis.—p. 183.
Eight Years of the Kahn Test. F. M. Rohow.—p. 189.
Gunshot Wounds in Nicaragua. H. V. Hughens.—p. 191.
Extermination of Bedbugs on Board Ship. R. E. Baker.—p. 193.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

42: 189-250 (April) 1934

Exploration of the Abdomen and Appendectomy for Atypical Symptoms: Results Five Years After Operation in One Hundred Cases. C. W. Mayo, Rochester, Minn.—p. 189.
Intraperitoneal Hernias Through Mesentery Defects. Gatewood, Chicago.—p. 191.
The Acute Abdomen. J. Z. Mraz and A. L. Blesh, Oklahoma City.—p. 199.
*Sarcoma of the Duodenum Treated by Partial Duodenectomy. C. S. Williamson, Green Bay, Wis.—p. 207.
A Handy Incision in Simpler Cases of Gallbladder Surgery. A. Schwyzer, St. Paul.—p. 211.
Lymphosarcoma of the Cecum in Childhood. C. F. Dixon, Rochester, Minn.—p. 216.
Metastatic Perinephric Abscess. J. R. McVay, Kansas City, Mo.—p. 220.
Radical Operation for Carcinoma of the Penis: Report of Seventy-Nine Cases. W. E. Leighton, St. Louis.—p. 226.
Acute Hydramnios and Hydrocephalic Anophthalmic Monstrosity: Report of Case. S. J. Tillim, Crown Point, N. M.—p. 232.
The Goiter Problem, with Especial Reference to Diagnosis and Treatment. A. B. Cooke and H. H. Greenway, Los Angeles.—p. 235.

Sarcoma of the Duodenum Treated by Partial Duodenectomy.—Williamson cites a case of primary sarcoma of the duodenum in which the tumor started as a fibroma of the duodenum and underwent malignant degeneration. The diagnosis of a duodenal tumor was made during the course of an exploratory laparotomy. A preliminary posterior gastroenterostomy was performed six months later in anticipation of extirpating the tumor. A partial duodenectomy was successfully performed about eleven months after the diagnosis and the patient had an uneventful recovery. The duodenum is infrequently involved by malignant conditions, making its partial or complete resection necessary or desirable. The author believes that when such a condition exists, other factors being equal, operation should be undertaken with a reasonable hope of success, although, as in his case, it may be necessary or desirable to precede the actual attack on the duodenum by a preliminary gastro-enterostomy. The reimplantation of the common bile duct and the major pancreatic duct into the intestine either together or separately can be done with a high degree of success and has been done experimentally by Mann and his co-workers. It seems that the surgeon is justified in attempting a curative type of operation for a resectable tumor of the duodenum even though it may necessitate the reimplantation of the common bile duct, the ligation of the duct of Santorini and the reimplantation of the duct of Wirsung.

West Virginia Medical Journal, Charleston

30: 145-192 (April) 1934

Clinical Significance of Oxygen Therapy. A. L. Barach, New York.—p. 145.
Soft Tissue Injuries Frequently Associated with Fractures of the Long Bones. F. A. Scott, Huntington.—p. 154.
Cardiac Disease: Consideration of Some of the Factors Involved in Diagnosis and Classification. W. V. Wilkerson, Montgomery.—p. 162.
Uveitis. W. F. Beckner, Huntington.—p. 169.
Nasal Mechanics. Sobisca S. Hall and H. V. Thomas, Fairmont.—p. 175.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Anæsthesia, Manchester

11: 87-130 (April) 1934

*Postoperative Pulmonary Complications. H. F. Griffiths.—p. 89.
Normal Regulation of Respiration. S. Wright.—p. 110.

Postoperative Pulmonary Complications. — Griffiths recommends that: 1. The preoperative and postoperative use of sedatives should be limited, as all sedatives tend to depress the respiratory center. 2. Larger doses of atropine than are usually employed should be prescribed to diminish excessive secretion of the bronchial mucus. The suggested dose is 1/150 grain (0.0013 Gm.) for adults and proportionately less for children according to the age. 3. No binder should be applied to the patient's abdomen; dressings should consist only of a roll of gauze secured by deep sutures. 4. All patients should be made to exert strong expiratory movements at frequent intervals for at least the first forty-eight hours after operation. The use of mixtures of carbon dioxide and oxygen appear to be contraindicated, because they cause strong inspiratory movements, which may result in the mucus entering deeper into the lung. Also patients, when conscious, are rendered extremely uncomfortable by the administration of these mixtures. The complications that are most frequently encountered are acute bronchitis or bronchopneumonia of varying severity, which may clear spontaneously, or obstruction of bronchioles by tenacious mucus may cause collapse of part of one or both lungs. Treatment should be directed toward the expulsion of the mucus by coughing, rather than to hyperventilation by mixtures of carbon dioxide and oxygen.

British Journal of Dermatology and Syphilis, London

46: 113-160 (March) 1934

So-Called "Primary Complex" of Tuberculosis in the Skin. E. Bruusgaard.—p. 113.
Removal of Inferior Cervical Ganglions and Its Effect on Hyperhidrosis and Cyanosis of the Hands and Feet. H. Leslie-Roberts.—p. 126.
Infection-Allergic Complex in Arsphenamine Dermatitic Reactions, with Especial Reference to Dermatophytosis. J. H. Stokes and G. V. Kulchar.—p. 134.

British Journal of Ophthalmology, London

18: 129-192 (March) 1934

Observations on Some Matters Associated with Experimental Corneal Grafting. J. W. T. Thomas.—p. 129.
Supplementary Note on Iris Inclusion for Chronic Glaucoma. H. Herbert.—p. 142.
Relationship of Histamine and Intra-Ocular Pressure. B. W. Rycroft.—p. 149.
Richard Banister: Additional Facts in Relation to the Father of British Ophthalmology. R. R. James and A. Sorsby.—p. 156.
Voluminous Orbitocranial Osteoma: Consecutive Cerebral Abscess of Nasal Origin. J. N. Roy.—p. 159.
Bilateral Papillitis Following Antirabic Inoculation: Recovery. H. S. Cormack and L. A. P. Anderson.—p. 167.
Oxycephaly in Brothers. M. R. Sawbury.—p. 169.
Chronic Retrobulbar Neuritis and Amblyopias of Toxic Origin: New Method of Treatment. N. N. Ray.—p. 170.

Journal of Mental Science, London

80: 1-186 (Jan.) 1934

Melancholia: Historical Review. A. J. Lewis.—p. 1.
Psychoses Associated with Childbirth. D. N. Parfitt.—p. 43.
Analytic Review of a Series of Cases of Insanity with Pregnancy. C. B. Bamford.—p. 58.
Female Homicides. J. H. Morton.—p. 64.
*Some Observations on Lipoid Metabolism in Mental Disorders. J. S. Sharpe.—p. 75.
*Blood Cholesterol in Epilepsy in Relation to Treatment by Dehydration and Ketogenesis. J. H. McLean.—p. 82.
Bicolored Guaiac Reaction in Mental Hospital Practice. S. W. Hardwick.—p. 87.

Lipoid Metabolism in Mental Disorders.—Sharpe states that the lecithin content of the blood in mental disorders shows no important variation from the normal. The cholesterol content of the blood in early dementia praecox is decreased about 25 per cent. Later there is an increase of about 30 per cent, and it remains at that level. This increase may be due to a hyperactivity of the suprarenals. The coefficient of utilization is low. In melancholia and confusional insanity the cholesterol content of the blood is slightly increased above the normal. The coefficient of utilization is low in these groups, denoting deficient oxidation and low metabolic activity. Cases of recurrent mania show a high blood cholesterol, particularly during an acute attack. The cyclic nature of the condition suggests that it is caused by a derangement in metabolic activity, probably involving the suprarenals, as evidenced by the blood cholesterol increase. The coefficient of utilization is high, indicating increased metabolic rate. There exists in the blood in certain melancholic and confusional states a powerful depressor substance having a choline-like action on the isolated frog heart. This substance is antagonized by epinephrine. Normally the depressor substance is in such small concentration as to be almost undetectable. In dementia praecox and recurrent mania this substance exists in small quantities, approaching the normal figure as determined by the physiologic test. Choline added to active serum disappears on standing after a few hours at laboratory temperature. The choline added to serum inactivated at varying temperatures remains. Some substance having the properties of an enzyme is destroyed by heating. These observations suggest that there is a deficiency or complete absence of such a substance (conveniently termed "cholinase") in melancholia and confusional insanity. Hypotonia is a clinical feature of these cases.

Blood Cholesterol in Epilepsy.—McLean attempts to correlate the work of Shaw and Sharpe with the methods of treating epilepsy by dehydration and ketogenesis. Sackett's method was used for the determination of cholesterol. The cases investigated were all of many years' standing. The patients were confined to bed without medication. Blood was collected at intervals of four hours. The observations indicate that the amount of blood cholesterol is lowered at the time of an epileptic attack. The author believes that the increase in concentration of cholesterol and urea in the treatment of epilepsy by dehydration is due entirely to the mechanical effect of the limitation of fluids. He suggests that the mechanical effect of limitation of fluids is assisted by the increased concentration of cholesterol. He placed two patients on a strict ketogenic diet for fourteen days. The results show a rise in the cholesterol level during ketosis. They are not conclusive, however.

Journal of Physiology, London

81: 1-146 (March 29) 1934

Electrical Responses of Light-Adapted and Dark-Adapted Frogs' Eyes to Rhythmic and Continuous Stimuli. R. Granit and L. A. Riddell.—p. 1.
*Dietetic Factors Influencing the Glucose Tolerance and the Activity of Insulin. H. P. Himsworth.—p. 29.
Pinealectomy in Rats, with a Critical Survey of the Literature. Dorothy H. Anderson and A. Wolf.—p. 49.
Oxytocic Property of the Blood of the Cow. G. H. Bell and S. Morris.—p. 63.
Effect of Ligation of Posterior Coronary Vessels on Electrocardiogram in Experimental Bundle-Branch Block. I. G. W. Hill.—p. 70.
Humoral Control of the Secretion by the Submaxillary Gland of the Cat Following Chorda Stimulation. J. Secker.—p. 81.
The Adrenals and Glucose Tolerance. H. Banerji and C. Reid.—p. 93.
Adrenalin-Like Action in Extracts from Prostatic and Related Glands. U. S. v. Euler.—p. 102.
Neuromuscular Isochronism and Chronologic Theory of Curarization. L. Lapicque.—p. 113.

Dextrose Tolerance and the Activity of Insulin.—Himsworth presents experiments which show that the administration to a rabbit of a diet rich in fat decreases the sugar tolerance, retards and diminishes the action of insulin on the blood sugar, prevents or delays the progressive improvement of sugar tolerance that occurs on injection of consecutive doses of dextrose, and impairs the ability of insulin to diminish the hyperglycemia following intravenous injection of dextrose. The administration of a diet rich in carbohydrate improves the sugar tolerance, accelerates and increases the depression of the blood sugar by insulin, favors the progressive improvement of sugar tolerance after consecutive injections of dextrose, and does not impair the action of insulin in reducing the hyperglycemia after intravenous administration of dextrose. The author concludes that these results can be explained on the basis of the experimental observation that fat diets and starvation diminish the susceptibility of an animal to insulin, while carbohydrate diets and the administration of dextrose increase the susceptibility to insulin. He suggests that the susceptibility of an organism to insulin can be explained by the hypothesis that insulin as prepared and secreted by the pancreas is an inactive substance, that it is activated in the body by an unknown factor, and that

the production of this unknown activator is increased by the administration and diminished by the withdrawal of carbohydrates.

Journal of State Medicine, London

42: 187-248 (April) 1934

Citizenship and the Care of Cripples. Georgiana Buller.—p. 188.
The Importance of Teaching Hygiene in Elementary and Secondary Schools. R. K. Brown.—p. 197.
Hygiene and Cancer. J. E. Nyrop.—p. 208.
After-Care for Tuberculous Patients in the Netherlands. T. W. te Nuyl.—p. 220.
Treatment of Early Stages of Infantile Paralysis. G. M. Levick.—p. 226.
Utilization of Infirmary Accommodation for Public Hospital Needs. E. B. Low.—p. 231.

Journal of Tropical Medicine and Hygiene, London

37: 97-112 (April 2) 1934

Contribution to History, Origin and Distribution of Lymphogranulomatosis Venerea in South America. W. E. Coutts.—p. 97.
*Castellani's Test for Albuminuria. W. H. Hoffmann.—p. 99.
British Solomon Islands Health Surveys, 1933. S. M. Lambert.—p. 100.

Castellani's Test for Albuminuria.—Hoffmann gives Castellani's test for albuminuria, which is as follows: The filtered urine, 5 cc., is placed in a test tube and 1.5 cc. of liquefied phenol is added by pouring it slowly down the sides of the tube by means of a pipet. The liquefied phenol will collect at the bottom of the tube. If within two minutes a definite white ring forms where the two liquids come in contact the test is considered positive; namely, the urine contains albumin. The author has found that it is quite as sensitive as other similar methods and that it always shows the reaction in a clear and distinct way. He has never seen false positive reactions in the negative urines that have been examined as controls. He finds the method exceedingly useful for the daily routine work of the practitioner and still more for hospitals and laboratories. It is also an easy control for other tests in doubtful cases.

Lancet, London

1: 611-666 (March 24) 1934

Causal Fallacy. E. G. Howe.—p. 611.
*Acute Pneumococcic Pharyngitis. R. G. Henderson.—p. 615.
Monocytosis and Agranulopenia in Vincent's Infection of the Mouth and Throat. S. J. Hartfall.—p. 620.
Comparison of Tests for Syphilis. J. E. Nicole and E. J. Fitzgerald.—p. 623.
*Transplantation of Living Grafts of Thyroid and Parathyroid. H. B. Stone, J. C. Owings and G. O. Gey.—p. 625.

Acute Pneumococcic Pharyngitis.—Henderson presents the case records of eleven patients with acute pneumococcic pharyngitis. There was little variation in the clinical manifestations throughout the group. There was no suggestion of contact with an acute or recent case of lobar pneumonia or bronchopneumonia or another similar pneumococcic tonsillitis. There was, however, a severe epidemic of pneumonia and influenza in the city at the time. All the cases were sporadic; except in one there was no associated injury or illness (a fish salesman who had just returned to work after being off duty for a fortnight with so-called influenza). The onset was rapid, attended with fever of from 100 to 103 F. and shivering. Local symptoms were remarkably constant, viz., severe sore throat, dysphagia and tender cervical glands, which in most of the cases were definitely enlarged. In all there was intense inflammation and edema of the pharynx with membranous involvement of the tonsils, uvula, soft palate and posterior pharyngeal wall. Macroscopically, the exudate was similar in appearance in each case. Those seen early showed a gray slimy glistening adherent exudate. Soon, however, there appeared erosion of the mucous membrane with petechiae and the membranous exudate rapidly became dark and necrotic. Local tissue destruction and sloughing resulted, but there was no characteristic fetor. In three of the patients, respiratory embarrassment was sufficient to warrant tracheotomy. In ten cases there was an associated pneumococcic septicemia. Only one patient recovered; all the others had a rapid and fatal termination. A throat swab and blood culture were taken on admission in each case but one, an early case, in which death occurred eight hours after admission and a blood culture was omitted. This patient, however, showed the pneumococcus in the throat in practically pure culture, and had all the typical signs and symptoms. The pneumococcus was found as the predominating organism in the throats of all patients and all the blood cultures taken showed an associated pneumococcic septicemia. Serologic examination of the various strains of pneumococci showed that one patient was infected with type I, four with type III and six with group IV.

Transplantation of Living Grafts of Thyroid and Parathyroid.—Stone and his associates believe that in the transplantation of living grafts of thyroid and parathyroid tissue a proper site should be selected and the form and size of the grafted material, the adaptation of the graft to the chemistry of its host and the existence of a state of deficiency causing a physiologic need of the tissue to be grafted should be considered. They have secured cross grafts of thyroid and parathyroid tissue which, when removed, seemed to be entirely healthy and growing vigorously at varying periods from twenty-one to eighty days after the implantation. There have been a great many failures, but the proportion of success has been sufficient to show that cross grafting of these endocrine glands is possible when all the conditions of the experiment are favorable. The method has been applied to two cases of human parathyroid tetany and four cases of thyroid deficiency. One of the tetany patients has lived one year since the first graft and the other seven months. They are entirely well clinically, and their blood calcium has returned to normal from a low level of 4.6 and 6.2 mg. per hundred cubic centimeters, respectively. The thyroid cases are too recent to make any report on. The details of the technic of tissue culture for these grafts of endocrine glands follow, in general, the principles well established for the growth of mammalian tissue. A small fragment is placed, under sterile conditions, on a coagulated medium and kept in a thermostat until it begins to liquefy the surrounding medium by its growth and chemical activity. It is then transplanted to a new culture medium. In actively growing tissues this may have to be done every second to fourth day. The medium consists of Tyrode's solution with extract of beef embryo as a stimulating substance, and serum and plasma derived from the animal in which the graft is to be placed. Enough serum and plasma to form a coagulum of fibrin are always used.

Medical Journal of Australia, Sydney

1: 361-394 (March 17) 1934

Port Phillip's Early Doctors, 1835-1839. G. T. Howard.—p. 361.
*Detection and Estimation of α-Dinitrophenol: New Drug for the Treatment of Obesity. A. Bolliger.—p. 367.
Calibration of the Sphere-Gap Voltmeters Employed at X-Ray Treatment Centers in Sydney. W. H. Love.—p. 369.
The Problem of Mentally Defective Children in New South Wales from the Educational and Vocational Points of View. A. E. Machin.—p. 370.

Detection and Estimation of Alpha-Dinitrophenol.—Bolliger states that, by the addition of a solution of methylene blue to a solution of dinitrophenol methylene blue, dinitrophenolate is obtained, which crystallizes in fine bronze-colored needles. This compound is sparingly soluble in most solvents, forming a green solution. Its solubility in chloroform is greater. The acidified solution is extracted with chloroform, and to the neutralized chloroform extract a dilute solution of methylene blue is added. If dinitrophenol or a similar compound is present, the chloroform extract will become green. To examine urine for traces of dinitrophenol, 20 cc. of urine in a separating funnel is acidified with one tenth of a volume of a 70 per cent solution of sulphuric acid. It is then extracted by gentle shaking for about three minutes with half its volume of chloroform. Permanent emulsions should be avoided. If, after standing, a sufficient quantity of chloroform does not separate cleanly, the chloroform must be separated by centrifugation. About 10 cc. of the chloroform extract is transferred to a test tube containing 1 Gm. of calcium carbonate. The contents are mixed well and 0.0001 normal methylene blue, chemically pure (about 0.004 per cent), is added in small drops. The mixture is shaken after every drop till the first change of color occurs. It is then filtered through a dry filter into another test tube and an equal amount of distilled water is added. It is shaken thoroughly and the water is removed. If the chloroform shows a distinct green color which cannot be extracted by further washings with water, alpha-dinitrophenol is present in the

urine. In the detection of dinitrophenol in the blood stream of a nonjaundiced person, serum acidified with a few drops of sulphuric acid is thoroughly shaken with an equal amount of chloroform. Then the mixture is centrifugated and the chloroform extract is pipetted off and filtered through a dry filter into a test tube containing some calcium carbonate. Then 0.0001 normal methylene blue is added in small drops till the mixture begins to change color. After filtering, the presence of dinitrophenol is indicated by a green tint of the chloroform extract. For the quantitative determination by titration of dinitrophenol in proprietary medicines, a known amount is dissolved in a 5 per cent solution of sodium hydroxide. After the solution is acidified with a 70 per cent solution of sulphuric acid, the dinitrophenol is extracted with several lots of chloroform. The combined chloroform extracts are treated with calcium carbonate, filtered and made up to a known amount. An aliquot part of the chloroform extract is transferred to a separating funnel and 0.0001 normal methylene blue is added from a buret. The technic of the titration is the same as the one described for the determination of trinitrophenol with methylene blue. The methylene blue combines with the dinitrophenol to give the chloroform-soluble methylene blue dinitrophenolate. Therefore, on extraction the watery layer originally containing the methylene blue turns yellow, while the chloroform takes on a green color. The end point is reached when the watery layer becomes colorless. The test described is not specific for 2:4 dinitrophenol. A similar compound is given by 2:4:6 trinitrophenol and this can be differentiated from the dinitro compound by the greater solubility in chloroform. In general it seems that all polynitro derivatives of phenol and naphthol with a nitro group in orthoposition to the hydroxyl group form with methylene blue an addition product, which dissolves in chloroform with the formation of a green color.

Practitioner, London

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Infertile Marriage. E. Holland.—p. 305.
Endocrine Aspects of Sterility. E. Novak.—p. 313.
Modern Approach to Problem of Human Sterility. S. R. Meaker.—p. 326.
Sterility in the Female. R. A. Gibbons.—p. 336.
Sterility in the Male. K. M. Walker.—p. 348.
Menstruation and Its Relation to Disease. W. C. W. Nixon.—p. 356.
Anesthesia in Labor: Review of Modern Progress. F. B. Parsons.—p. 366.
General Principles of Diagnosis and Treatment in Pulmonary Tuberculosis. H. M. Davies.—p. 374.
Unusual Case of Hydatidiform Mole. G. G. Kayne.—p. 386.
Medicolegal Problems in General Practice: III. Medicolegal Aspects of Mental Disorder. J. G. P. Phillips.—p. 391.

South African Medical Journal, Cape Town

8: 157-196 (March 10) 1934

Tuberculosis in Pretoria. H. G. L. Aneck-Hahn.—p. 159.
The Medical Conference at Dar-es-Salaam. H. A. Moffat.—p. 163.
Impressions of the Dar-es-Salaam Congress. C. M. Murray.—p. 166.
Collapse Therapy in Pulmonary Tuberculosis: Its Place and Its Scope. D. P. Marais.—p. 169.
Cyclopropane: Notes on a New Anesthetic Agent. R. M. Muir.—p. 175.
Significance of Focal Infection in Practice. G. Buchanan.—p. 177.

Tubercle, London

15: 289-336 (April) 1934

*Immediate Results of Phrenic Evulsion in the Control of Apical and Upper Lobe Cavitation: Series of Fifty Cases. A. W. Russell.—p. 289.
Some Aspects of the Work of the Sanatorium Industrial Villages of Papworth and Preston Hall. N. Bardswell.—p. 292.
Delayed Pleural Shock Following an Artificial Pneumothorax Refill and Presenting Some Unusual Features: Case. C. E. H. Anson.—p. 296.
*Anatomic Changes in the Diaphragm Following Phrenicectomy: Report of Eleven Necropsies. W. S. Stanbury.—p. 300.

Phrenic Evulsion in Control of Cavitation.—In his fifty cases Russell found phrenic evulsion to be of definite value in controlling cavities in the apex and upper lobe. It should be considered in all such cases, no matter what size or type of cavity may be present. It is of most value in combination with artificial pneumothorax. As a method of dealing with adhesions preventing effective collapse it offers an alternative to cutting which is effective, easily performed and practically without complications. It was relatively of more value in women, the figures being 63 per cent in women and 47 per cent in men. Upper lobe cavitation occurred approximately twice as frequently in the left lung as in the right. Phrenic evulsion was relatively of more value in left-sided lesions (59 per cent) than in right-sided lesions (47 per cent). The operation appeared to affect thick-walled and thin-walled cavities equally. It was of most value in controlling medium sized cavities (62 per cent). The average length of phrenic nerve evulsed was 17 cm. The average rise was 4.8 cm. There was a better average rise of the left diaphragm by 0.6 cm. In 78 per cent the paralyzed diaphragm showed paradoxical movement.

Anatomic Changes in the Diaphragm Following Phrenicectomy.—Stanbury gives an analysis of eleven necropsy cases of atrophy of the diaphragm following section of the phrenic nerve. In all but one case the operation of choice was evulsion by the method of Felix. The duration of the paralysis noted in the series varied from three weeks to six years. Atrophy of the diaphragm is evident as early as the third week after section of the phrenic nerve and is complete by the fourth month. After paralysis, one half of the diaphragm is elevated and eventrated into the thorax. With stretching it becomes a thin whitish membrane of parchment-like thinness. Histologically, the atrophy of the paralyzed half of the diaphragm is seen to be complete and uniform. In one case only, a few normal muscle bundles were seen in one area, scattered among atrophic fibers. This probably represents an accessory nerve supply rather than actual regeneration. In view of the marked distortion of the abdominal viscera in ten of the cases, three of which presented a fatal gastroduodenal obstruction, the possibility of such complications must be considered seriously when advising phrenicectomy for the treatment of pulmonary disease.

Fukuoka-Ikwadaigaku-Zasshi, Fukuoka

27: 23-34 (March) 1934

Heredity of Tuberous Cerebral Sclerosis. T. Yamamoto.—p. 23.
Experimental Studies on Formation of Procyaneus Toxin, Procyanase and Procyanolysine. S. Tsutsumi.—p. 27.
Investigation on Normal Vital Capacity in Japanese Laborer and Its Correlation with Size of Body. K. Yoshinaga.—p. 30.
*Clinical Investigations on Summer Encephalitis in Japan. S. Naka, S. Kingo and K. Kuroiwa.—p. 30.

Summer Encephalitis in Japan.—Naka and his associates point out that whether the acute encephalitis that occurs in Japan every year during the summer months is identical with epidemic encephalitis (Economo) is a disputed matter. They report their observations in seventy-six cases. They found that this form of encephalitis occurs only during the summer months. In this respect the disorder differs from the epidemic encephalitis described by Economo. The disease occurs for the most part among the poorer classes, whose houses are small and too warm. This type of encephalitis is also differentiated from epidemic encephalitis by the fact that it affects older persons (77 per cent were more than 40 years old) and small children primarily. It was revealed that approximately two thirds of the patients had passed through a disease that impairs the resistance of the brain or of the entire organism (cerebral hemorrhage, high blood pressure, nephritis, headaches, neuralgia, hydrocephalus, febrile diseases, general debility or congenital syphilis). The eliciting factor in 74 per cent of the cases was physical exertion during exposure to the summer heat. The prodromal stage lasts generally only one day, rarely two or three days, and in exceptional cases four or five days. The symptoms listed in the order of their frequency are headache, lack of appetite, general debility, nausea and vomiting, drowsiness and disturbed sleep. It is surprising that the sleep disturbances are comparatively rare. The disease usually begins with high fever, and the pulse is relatively slow. On the first or at the latest on the fourth day, the patient becomes delirious or comatose. After this stage, either convalescence occurs or a condition of apathy supervenes. The psychic symptoms of this phase are total amnesia regarding the delirious phase, slow thinking, perseveration, apathy, astereognosis and various forms of aphasia. During this stage there frequently exists somnolence as the result of fatigue. In contradistinction to epidemic encephalitis, symptoms on the part of the cerebral nerves are comparatively rare. The pressure of the cerebrospinal fluid is normal or slightly increased. There is always a pleocytosis

(average about 60 cells per cubic millimeter). Phase I of the Nonne-Apelt reaction is always positive. The course of this form of encephalitis is comparatively short. In patients who recover, the symptoms disappear in from nine to twenty-eight days. The mortality rate is 63 per cent, death occurring between the fourth and twelfth days. The authors reach the conclusion that the Japanese summer encephalitis is a distinct disease entity, which differs from acute meningitides, the epidemic encephalitis described by Economo, the encephalitis described by Strümpell-Leichtenstern, and alcoholic pseudo-encephalitis. The symptomatology indicates that it is an acute inflammation of the midbrain and end-brain or an acute panencephalitis.

27: 35-50 (April) 1934

Statistical Observations and Morphologic and Biologic Studies on Parasitic Amebas of Human Intestinal Tract. Hirayama-Sigehi.—p. 35.
Ferments of Tubercle Bacilli. S. Kawabata.—p. 37.
Studies on Fermentative Decomposition of Histidine. S. Sakisaka.—p. 40.
Anatomy of Cerebral Arteries of Rabbits. D. Miyata.—p. 41.
*Blood Picture of Summer Encephalitis in Japan. T. Matsumura, S. Komiya, S. Tachibana, M. Fujibayashi and N. Kajiyama.—p. 44.

Blood Picture of Summer Encephalitis in Japan.—Matsumura and his associates made hematologic studies in thirteen typical cases of summer encephalitis. They found that the erythrocyte number is within normal limits. In the cases that take an acute course there are slight changes in the size and shape of the erythrocytes and normoblasts. The hemoglobin content averages 78.6 per cent. During convalescence the hemoglobin content is slightly reduced. The number of leukocytes increases. The degree of the increase corresponds to the severity of the disease process: it is highest during the severest stage of the disease. After this stage has passed, the number of leukocytes gradually decreases again. The neutrophil leukocytes are as a rule greatly increased, particularly during the severest stage. During convalescence they decrease again. The lymphocytes, however, are decreased during the severest stage of the disease and reach normal values during recovery. The monocytes are slightly below normal. The eosinophil leukocytes disappear or decrease noticeably during the height of the disease process, and the basophil leukocytes seem to be decreased. Plasma cells were found in only two cases. The average number of blood platelets is normal, but in severe cases their number seems to decrease at the height of the disorder and to increase during convalescence. The sedimentation speed of the erythrocytes is increased. The coagulation time, the bleeding time and the resistance of the erythrocytes show no noticeable changes.

Japanese Journal of Obstetrics and Gynecology, Kyoto

16: 431-518 (Oct.) 1933

Statistics of Uterine Cancer. E. Terada.—p. 432.
Biologic View of the Twin Fetus (Supplement): II. Twins in Japan. G. Oku.—p. 457.
Statistical Investigation on the Time Interval Between the Marriage and the First Parturition and Those of Successive Two Parturitions. T. Kurita.—p. 466.
Experimental Study of Thyroid Function During Pregnancy, Parturition and Puerperium: Part I. Metabolism of Iodine During Pregnancy and Puerperium; VI. Effects of Preparations of Endocrine Gland to Metabolism of Iodine. U. Nakamura.—p. 470.
Histologic Study of the Cancer in the Human Being: Part I. Investigation of Chromatin. T. Ota.—p. 472.
Influence of X-Rays Irradiation on Uropoietic System: Part IV. Study on Kidney with Formation of Ureterofistula (Histologic Change of Kidney After the Formation of Utero-Ureteral Fistula). S. Takita.—p. 476.
Experimental Study on Effects of Thyroidectomy to Pregnancy. K. Nojima.—p. 483.

Lues (Bulletin Soc. Japonaise de Syph.), Kyoto

10: 13-20 (Feb.) 1934

Metastatic Parenchymatous Keratitis in Syphilitic Rabbits: I. Distribution of Spirochaeta Pallida in Early Stage. T. Funabashi.—p. 13.
Spirochetes in Lymph Nodes of Syphilitic Rabbits: II. Change in the Spirochete Content of the Spleen. S. Watanabe.—p. 16.
Experimental Yaws of Mouse: I. Spirochaeta Pallida in Iliac Lymph Nodes. H. Misaizu.—p. 18.
Passive Immunity to Syphilis in Rats. K. Yasumoto.—p. 19.
*Contribution to Clinical Study of Periostitis and Osteitis in the Early Stage of Frambesia. K. Iseki.—p. 20.

Periostitis and Osteitis in Frambesia.—Iseki observed two cases of yaws. One patient, a woman of 19, showed spindle-shaped swelling in the second segment of both her middle fingers, accompanied by slight pain. The patient contracted the infection one year before from her child and then presented frambesic papules and afterward generalized papules, which were cured by three injections of arsphenamine. Six months later the papules returned, and about three months afterward the lesion appeared in the right hand, and in two months more it appeared in the left. Roentgen examination showed that both middle fingers were obviously thickened at the second segment, the shadow being especially well marked on the inner side. The right one presented slight swelling of the outer side of the bone. Also the first phalangeal joint of the left hand was affected. The other patient, a girl of 10, had the same spindle-shaped swelling in the first segment of the second finger of the right hand. She had suffered from frambesic papules for two or three months, and they were still to be seen. She presented swelling of the middle part of the left tibia, in which there was slight pain. There was also a frambesic papule on the left middle finger and one on the left joint of the knee. As these patients have been suffering from the early stage of frambesia with positive seroreaction and were healed readily by the administration of arsphenamine, the lesions may be safely regarded as being of frambesic origin. They may be considered as a periostitis and osteitis of the phalanges in the secondary stage, and not in the tertiary (gummous) stage; the cure, in the latter case, which is destructive in nature, is usually only slowly brought about through specific treatment.

Liége Médical

27: 529-560 (April 22) 1934

*Treatment of Myocardial Insufficiency by Dextrose and Combined Dextrose-Insulin. Guillaume.—p. 529.
Peripheral Facial Paralyses of Familial and Relapsing Type. M. Schachter.—p. 542.

Treatment of Myocardial Insufficiency. — Guillaume believes that the rationale of treating myocardial insufficiency by dextrose and insulin is sound. The utilization by the cardiac muscle of the increased supply of energy should be advantageous. In several cases good results were obtained, but a favorable outcome was not constant. Dextrose and insulin appeared to have an especially favorable action in cases in which the pulse showed alternation and in cases in which the electrocardiogram showed an inversion of the T wave in two leads. Even the results obtained in cases of angina pectoris were encouraging. In painful infections of the heart, however, this treatment was without action. The author states that the treatment is without danger to the heart and may be tried with impunity.

Presse Médicale, Paris

42: 553-576 (April 7) 1934

*Choleriform Syndrome in Serious Toxic Infections of Early Infancy. L. Ribadeau-Dumas.—p. 553.
Thrombophlebitis of Left Upper Arm Revealed by Effort: Resection of Segment of Thrombosed Vein; Arterial Denudation; Recovery. P. Huard.—p. 556.
Contagiousness of Tuberculosis. A. Gismondi.—p. 558.
General Anesthesia with Tribrom-Ethanol by Rectal Route in Otorhinolaryngology. A. Malherbe, G. Thévenard and R. Vilenski.—p. 560.
*Oxygen and Carbon Dioxide Inhalations in Therapy of Intoxication by Suffocating Gases. D. Cordier.—p. 561.

Choleriform Syndrome in Infections of Infancy.—Infantile cholera is a syndrome and not a morbid entity. Ribadeau-Dumas believes that the ratio of cell chlorides to plasma chlorides is a practical method of evaluating the changes in cellular ionic equilibrium. Thus normally in a child the cell chloride is 1.8 per cent and the plasma chloride 3.6 per cent, giving a ratio of 0.5. In the choleriform syndromes resulting from an infection this ratio is elevated. Coincidentally the renal function is disturbed, and oliguria, albuminuria and cylindruria appear. The blood urea is increased, it being common to observe 1 or 2 Gm. or more. In two children with the choleriform syndrome observed by the author the cell-plasma chloride ratio was 0.6. One patient recovered and the other died. He concludes that hyperchloremia may exist without modification of the cell-plasma chloride ratio. Under such circumstances dextrose solution is used to reduce the level of both the tissue and plasma chlorides. When the cell-plasma chloride ratio is increased, bicarbonate solution is used to reduce the level of both the tissue and plasma chlorides. When the cell-plasma chloride ratio is increased, bicarbonate solution is

used to reduce it. In children an isotonic solution is employed. Finally, in hypochloremia an isotonic salt solution is used.

Inhalations for Intoxication by Gases.—Cordier believes that it is not logical to treat asphyxias without lesions of the lungs by the same method of therapy as those due to suffocating gases associated with serious pulmonary lesions. In acute phosgene poisoning, for example, the oxygen of the arterial blood and the saturation of the hemoglobin are diminished. The p_H also is progressively lowered. Likewise the proportion of free carbon dioxide in the plasma becomes higher than normal, especially at the moment of death. In the lung of a person affected with pulmonary edema due to a suffocating gas the volume of air that can circulate is naturally limited. Finally, the respiratory center in this type of poisoning is not deprived of stimulus, since the carbon dioxide content of the plasma is raised by the condition itself. In both types of intoxication there is therefore a lack of oxygen. In carbon monoxide poisoning, however, the free carbon dioxide is diminished. With these essential differences in mind the author concludes that in asphyxias without lesions of the lungs a treatment consisting of inhalation of oxygen, oxygen and carbon dioxide or air and carbon dioxide may be used. In those caused by suffocating gases, oxygen alone is capable of combating the anoxemia. Carbon dioxide mixed with oxygen or air can only serve to aggravate the acidosis, dyspnea, edema and asphyxia in conditions of this nature.

48: 577-592 (April 11) 1934

Spreading Torpid Cellulitis of Abdomino-Inguinal Region. P. Chevallier and A. Fiehrer.—p. 577.
*Enteralgic Crisis and Chronic Appendicitis of Enteralgic Nature. P. Jacquet.—p. 578.
Important Point in Diagnosis of Operability of Cancer of Rectum in Man. R. Leibovici and R. Soupault.—p. 580.
*Rôle of Neurovegetative System in Permanent Arterial Hypertension. J. Olmer and J. Carbonel.—p. 581.

Enteralgic Crisis and Chronic Appendicitis.—Jacquet describes a condition that differs from simple colic and in its acute rhythmic pain of several hours' duration justifies the name of enteralgic crisis. Morphine may attenuate the condition but does not interrupt it. The crises occur in series and in certain seasons of the year. Often they arise during the night accompanied by nausea, bilious vomiting, fever sometimes, and pain beginning in the right hypochondrium below the costal margin. Conforming to its colic character the abdomen is relaxed and palpation of the abdomen is only slightly painful, if at all. Violent pulsation of the abdominal aorta is usually visible and palpable. The crisis ends in the morning at the time when colonic digestion ends. It leaves the patients panting, prostrate and in a state of chill in the severe cases. After a short convalescence no signs of the attack remain. Various causes appear to be responsible at different times for this picture. Ptosis of the right colic angle, fecaliths and pericholecystitis have been determined in some instances. The most frequent cause is chronic appendicitis; sometimes, in fact, enteralgic crises are the only symptom of appendicular disease. Sensitivity of the appendix to pressure often arises only at the onset of a crisis and endures only a few hours after. Retrocecal appendixes have been found in most of these cases that have come to operation. Of four with the appendix in the normal position, three were tuberculous. Tenderness to palpation was most marked over the ileocecal region. The author states that enteralgic appendicitis, regardless of anatomic form, offers an excellent prognosis from the operative standpoint.

Neurovegetative System in Hypertension.—Olmer and Carbonel believe that epinephrine is the logical substance with which to test the rôle of the neurovegetative system. It is the product of secretion of the suprarenal medulla and is therefore physiologically allied to the neurovegetative system. Their technic is as follows: The arterial tension is measured with the oscillometer of Boulitte. Three successive measurements are made and the last is retained. Small doses of epinephrine (1 or 0.5 cc. of 1:1,000 solution) are given intramuscularly. The tension and pulse are measured immediately after the injection, each minute for ten minutes, then every ten minutes for an hour, and finally every half hour until the pressure and pulse return to normal. This test was applied to twenty-four hypertensive and nine normal subjects. In two of the hypertensive patients the arterial tension was slightly increased (1 cm. of mercury) for forty and twenty minutes, respectively. In the twenty-two others a reduction of the blood pressure occurred. Of the nine normal persons, no notable change occurred in four; in five there was a diminution in arterial tension. Thus epinephrine produced in hypertensive persons an important and lasting reduction of the arterial tension, while the modification of pressure in normal persons was slight. In this differential action lies the proof of the derangement of the vegetative nervous system in hypertension. The authors conclude that, excepting perhaps in renal hypertension at the onset, the nervous system and vegetative metabolism are always disturbed in hypertensive persons.

Schweizerische medizinische Wochenschrift, Basel

64: 345-368 (April 21) 1934. Partial Index

Disappointments and Failures in Treatment of Heart Disease by Family Physician. J. Karcher.—p. 345.
Guiding Principles in Treatment of Leukemias and Malignant Granulomas. O. David.—p. 351.
Neurologic and Mental Syndrome of Rickets. M. Schaechter.—p. 353.
Rupture of Healthy Kidney Without Definitely Definable Trauma. J. Schürmann.—p. 355.
*Rare Complication in Removal of Adenoids: Case of Nasopharyngeal Torticollis. Piotet.—p. 355.

Nasopharyngeal Torticollis.—Piotet relates the history of a girl, aged 8, who, after removal of the adenoids, felt severe pains in the left side of the neck. Examination revealed that the head was inclined to the left side, the cervical muscles were rigid and the slightest movement of the head caused pain. The temperature fluctuated between 37.8 C. (100 F.) and 38.5 C. (101.3 F.). The fever and the fact that the sternocleidomastoid muscle was neither rigid nor painful excluded the diagnosis of simple torticollis. After thorough examination, the author discovered a small retropharyngeal abscess from which pus was discharged. After two months of subfebrile temperature his patient recovered. He points out that besides the extreme cases, in which a luxation of the atlas takes place, there occur milder cases, in which a luxation does not take place. His case belonged to the latter group. As to treatment, he says that a recent luxation can be reduced by continuous extension by means of a special apparatus for the treatment of torticollis. If applied later, this treatment will have satisfactory palliative effects.

Minerva Medica, Turin

1: 529-568 (April 21) 1934

Synthesis of Medical Diagnosis. C. Gamna.—p. 529.
*Clinical Significance of Investigation of Tonsils. R. Olivetti and E. Malan.—p. 535.
Malignant Lymphogranulomatosis and Concomitant Infection Due to Diplococcus Crassus. F. Sabatelli.—p. 542.
*Influence of Calcium Therapy on Behavior of Glutathione in Tuberculosis. E. Baroni.—p. 548.
Chronic Glomerulonephritis with Convulsive Uremia and Meningeal Reaction. C. Renzo.—p. 551.
*Neoarsphenamine in Treatment of Typhoid. C. Re.—p. 555.

Tonsil Investigation.—By means of aspiration, Olivetti and Malan investigated the tonsils of fifty patients presenting nephropathies, polyarthritis, rheumatism and cryptogenic sepsis. Of the various generalized reactions following tonsillar trauma, the authors consider the changes in the leukocytes, preceded or not by leukopenia, signs of tonsillar involvement. The absence of quantitative variations would indicate that the tonsils are not affected. They preferred aspiration to tonsillar traumatisms such as massage, rolling and thermic stimulations because, when produced by means of a suitable instrument, aspiration causes a constant traumatism in all cases and is a traumatizing maneuver which often rids the tonsils of numerous cheesy deposits. The authors first took a leukocyte count and then aspirated the tonsil for from thirty to forty-five seconds with a Worms-Le Mée glass pipet, the aspirating force being furnished by an electric motor of one-fourth horse power. After this the leukocyte count was taken every fifteen minutes for the first hour and every thirty minutes during the next two or three hours. In a number of patients in whom the test was positive the tonsil was the seat of a latent chronic infection. In considering the miniature focus resulting from aspiration, the authors accept the hypothesis of superinfection rather than reinfection, the reaccession of disease symptomatology being interpreted on the theory of a renewed passage of germs through the old point of entry. The recrudescence of articular pains,

hematuria or fever observed after tonsillar aspiration is important, especially when the disease of the patient did not previously indicate a focal origin. The authors emphasize the clinical importance of the curves showing absolute and relative neutrophilia. The curve indicating only leukopenia shows that the tonsils are not involved. All such patients presented an absolute neutropenia in addition to an absolute and relative lymphopenia.

Calcium Treatment and Glutathione in Tuberculosis.—Baroni studied the behavior of reduced glutathione of the blood in twenty patients presenting pulmonary tuberculosis. The patients were given daily intravenous injections of 10 cc. of a 10 per cent solution of calcium gluconate for ten consecutive days. The glutathione rate was estimated in blood taken immediately before treatment, after the fifth injection, after the tenth injection and five days after the last injection. Of twenty patients, eighteen showed a marked increase in the glutathione rate, while two did not present any changes. After five days of suspension of treatment, sixteen patients showed increased values, three unmodified values and one lower values. After fifteen days, eleven patients showed stationary values and nine diminished values. The increase in the glutathione rate of 90 per cent of the cases, which was protracted during the days following the treatment, is attributed by the author to a reduction of intra-organic oxidative processes due to the calcium ion.

Neoarsphenamine in Treatment of Typhoid.—Re states that the treatment of typhoid with neoarsphenamine should be tested on a large scale. The febrile period is shortened. This indicates that, when a rapid improvement of the general condition is evinced, the probability of complications diminishes proportionately and saves the defensive reserves of the organism. The treatment starts with a dose of 0.15 Gm. of neoarsphenamine or, in robust individuals if thought necessary, 0.3 Gm. The preceding dose is repeated at intervals of from two to three days or the successive dose is increased. It is not possible in this regard to fix a rule, but attention must be given to the tolerance of the individual patients. Several authors have advised increasing the doses to 0.6 Gm., but the author never raised them beyond 0.45 Gm.

Archivos de Medicina Cirugia y Espec., Madrid

37: 361-388 (April 7) 1934

*Desensitization by Autovaccines in Chronic Colitis. H. G. Mogena.—p. 361.
Meaning of Ammoniemia in Origin of Eclamptic Crisis. J. Botella Llusiá.—p. 363.

Desensitization by Autovaccines in Colitis.—Mogena advises the use of autovaccines for the treatment of chronic spastic mucous colitis of bacterial origin. He obtains the organisms from the colon with the aid of rectosigmoidoscopy, the technic of which he describes. Cultures are prepared from the different types of organisms isolated from the colon and are killed by heat without the addition of an antiseptic. Intradermal injections of the cultures are given to the patient. The intensity of the reactions is observed one-half hour and twenty-four hours after the injection, and a vaccine prepared with the organisms whose cultures produce the most intense reactions. It is advisable to begin desensitization with small doses of the vaccine and to increase them gradually. Repeated small doses maintain the allergic condition. The author treated thirty-two patients suffering from chronic mucous spastic colitis and he was able to follow the results in twenty-six of the group. There was complete disappearance of the symptoms in sixteen cases, marked improvement in seven and failure in three. Two patients, in the group of three failures, probably had colitis of tuberculous origin because they reacted positively to the tuberculin test. Although the length of the treatment cannot be as yet determined, it is advisable to use the vaccines for several months in order to obtain complete desensitization. If the autovaccine treatment fails during the first few months, it is advisable to repeat the entire process and search for a new allergic reaction. New material is taken from the colon and new cultures and new intradermal injections are made. As a rule, the new cultures show the presence of other bacteria not previously observed, the vaccines from which give finally satisfactory results. The author used autovaccines, also, in eight cases of advanced ulcerative colitis. The technic followed both in the preparation and in the administration of the vaccines was the same as that used in cases of chronic spastic mucous colitis. In this group he obtained the following results: There was lasting improvement in one case, slight improvement in two cases and no change in the remaining five. The author believes that these results are due to the fact that chronic spastic mucous colitis is of allergic origin (due either to alimentary or to bacterial allergens), while chronic ulcerative colitis is not of an allergic nature.

Beiträge zur klinischen Chirurgie, Berlin

150: 335-446 (April 14) 1934

Arteriovenous Anastomosis. S. Schumacher.—p. 335.
*Treatment of Purulent Peritonitis. B. Breitner.—p. 340.
Surgical Treatment of Perforated Gastric Ulcer. H. Pich.—p. 346.
Rare Case of Multiple Adenomas of Kidney. Dschu-Yü-Bi.—p. 356.
Course of Healing Processes in Bone Fracture. E. W. Lexer.—p. 372.
Diffuse Acute Osteomyelitis. U. Loewe and G. von Pannewitz.—p. 382.
*Thrombo-Angiitis Obliterans. R. Hanser.—p. 390.
Contribution to Arteriovenous Anastomosis. O. Voss.—p. 414.
Palliative Gastric Resection in Ulcer Disease and Its Late Results. F. Mörl.—p. 424.

Treatment of Diffuse Peritonitis.—Breitner reports ten cases of diffuse suppurative peritonitis treated with the method of irradiating the intestine with ultraviolet rays during the course of the operation. The method was originated by Havlicek, whose purpose in irradiating the intestine during the operation was to study the circulation. Havlicek noticed that the convalescence of patients who had been irradiated was painless and brief. In the last three years he has operated in 108 cases of diffuse suppurative peritonitis without a death. The latest large statistics of Kirschner on diffuse peritonitis showed a general mortality rate of 47.7 per cent and for those of appendicular origin a mortality rate of 38.5 per cent. Havlicek removes the focus of infection, after which a coil of intestine is brought out if possible with its mesentery and the omentum. This is irradiated on either side with ultraviolet rays from a distance of about 35 cm., the procedure lasting from five to twenty-five minutes. Of the author's ten patients, eight recovered and two died. The theory explaining the effect of the treatment is as follows: The patient with peritonitis dies, as a rule, because of cardiac failure. This failure is due to withdrawal of a large amount of blood that is stagnating in the splanchnic capillaries: the patient is said to bleed into his own splanchnic area. Irradiation of the intestine releases the histamine, the effect of which is to open the direct arteriovenous anastomoses and to raise the pressure within the portal vein. Circulation is thereby quickened, the minute volume is increased and the danger of cardiac failure is obviated.

Thrombo-Angiitis Obliterans.—Hanser reports three cases of angiitis obliterans in patients whose ages were 43, 38 and 37 years. Death in the first case was caused by a morbid process in the coronary arteries identical with that causing gangrene of the right lower extremity. In the other two cases the coronary arteries presented the picture of angiitis obliterans. Sudden death in these cases was attributed to cardiac or coronary causes. The blood vessels of the extremities were not involved. The author considers angiitis obliterans a generalized inflammatory disease of the vascular system, and capable of localization. The process may involve internal blood vessels without simultaneous involvement of the extremities. The term "juvenile gangrene of extremities" is justified as a clinical concept; however, it represents only one manifestation of the generalized blood vessel disease of the organism when considered from the point of view of pathology. The concept that the disease is caused by suprarenalemia and should therefore be treated by suprarenalectomy and sympathectomy meets with the objection that epinephrine, while narrowing the lumen of the blood vessels of various territories, has the opposite effect on the coronary arteries and widens them.

Deutsche medizinische Wochenschrift, Berlin

60: 591-632 (April 20) 1934. Partial Index

Life Expectancy in Patients with Blood Diseases. E. Masing.—p. 591.
Significance of After Fluctuation (Everything After S) for Estimation of Heart Disease. H. Quincke.—p. 595.
Topography of Cardiac Infarct in Acute Coronary Occlusion. A. Hinrichs.—p. 598.
Appendicitis and Fecal Concretion as Result of Disturbed Function of Appendix. K. Westphal.—p. 600.

Medizinische Klinik, Berlin

30: 497-532 (April 13) 1934. Partial Index

Modern Problems in Nutrition of Patients. E. Grafe.—p. 497.
Disturbances of Sympathetic Functions and of Metabolism in Dermatoses. B. Spiethoff.—p. 502.
*Severe Agranulocytosis with Fatal Outcome After Treatment with Typhoid Vaccine. H. Schur.—p. 504.
Coronary Occlusion as Cause of Sudden Death. W. Neugebauer.—p. 508.
*Treatment of Spinal Disturbances in Pernicious Anemia. E. Mester.—p. 512.
*Quartz Lamp Irradiation in Trigeminus Neuralgia. R. Ausch.—p. 513.
Urethral Tuberculin Reaction. M. Oppenheim.—p. 514.
Experimental Investigation on Influence of Ligation of Spermatic Duct on Testicle. E. R. Welcker.—p. 515.

Agranulocytosis After Treatment with Typhoid Vaccine.—Schur reports a case of agranulocytosis with severe myeloid reaction in blood and spleen, which developed after treatment with typhoid vaccine. A review of the literature disclosed five other cases of changes in the blood following treatment with typhoid vaccine. In the first there developed a temporary thrombopenia and a hemorrhagic diathesis, in the second a mixed lymphatic and myeloid reaction, in the third a chronic lymphatic leukemia, in the fourth a chronic myelemia, and in the fifth, as in the reported case, an agranulocytosis. The literature describes two cases of neutropenia and lymphatic reaction following paratyphoid. From the fact that the typhoid toxin may cause various changes in the hematopoiesis, from a simple thrombopenia to agranulocytosis with myeloid or lymphatic reaction and to chronic myelemia and lymphemia, the author concludes that these disorders must be related, and he emphasizes that investigations on the pathogenesis of leukemia should be considered in this regard. These observations have practical significance in that they prove the necessity of caution in the use of bacterial toxins, particularly typhoid toxins.

Treatment of Spinal Disturbances in Pernicious Anemia.—Mester reports that in the treatment of the spinal complications of pernicious anemia he obtained good results with daily injections of a preparation containing liver, arsenic, strychnine and sodium glycerophosphate. He discusses the histologic aspects of the spinal changes that develop in pernicious anemia and reaches the conclusion that it is of vital importance to begin the treatment early.

Irradiation in Trigeminus Neuralgia.—In a case of refractory trigeminus neuralgia Ausch resorted to treatment with the cold quartz lamp. In sixteen sessions the rays were applied from the outside at the infra-orbital foramen, as well as intra-orally along the entire right maxilla. The final result was complete freedom from pain, which has persisted for more than a year. The author employed this method in more than twenty cases, and on the basis of his observations he concludes that the cold quartz lamp should always be tried before resorting to alcohol injection or to a surgical intervention in trigeminus neuralgia. Since July 1933 the author's method has been adopted by a clinic, and favorable results have been corroborated. He admits that ultraviolet irradiations in cases of trigeminus neuralgia are not new as such. The new aspect of his method is that the cold quartz lamp makes it possible to approach the second and third branches of the trigeminus from the oral side. The burner of the cold quartz lamp can be brought into direct contact with the mucous membrane.

Münchener medizinische Wochenschrift, Munich

81: 625-660 (April 27) 1934. Partial Index

Blood Group, Serologic Constitution and Wassermann Reaction. Z. Poehlmann.—p. 625.
*Pathogenesis, Nature and Therapy of Neuralgias and Chronic Myalgias. G. Benczúr.—p. 627.
Tonsillectomy During Acute Inflammations. F. Zöllner.—p. 634.
Muscular Exercises in Internal Diseases. R. Trumpp.—p. 642.
*New Method of Treatment of Lupus Vulgaris. W. Richter.—p. 644.

Neuralgias and Chronic Myalgias.—Benczúr shows that neuralgia and neuritis frequently are not sufficiently differentiated. Pain may be the only symptom of a mild neuritis, but he thinks that only in this case can the two be identified. In most cases neuralgia is the symptom of a disturbance in some other part of the body, although neuralgias, particularly sciatica, may be caused by pressure on a nerve. The author considers that he is justified, however, in stressing the reflex neuralgias, because the neuralgias and neuralgia-like pains that are not caused by neuritis or pressure are reflex manifestations. He thinks that his opinion is justified in view of the fact that the pathogenesis, the course and the cure of many neuralgias and myalgias seem to be subject to the same laws as are the reflexes. The sudden appearance and cessation, the changes in intensity, the strong influence on the pain of external conditions such as cold, dampness and drafts, the frequent relapses and the high incidence during certain periods of life are further proofs for their reflex character. The author considers that the factors essential in the development of a reflex neuralgia or a reflex myalgia are a basic disorder that elicits the reflex, a high reflex response in the nerve or muscle, a high reflex response of the entire organism and an eliciting factor. After discussing these factors he points out that in the past the treatment of neuralgia and myalgia frequently considered only one symptom, the pain, without being aware of the real cause of the pain. It is necessary to determine whether the pain in neuralgia or myalgia is caused by inflammation or pressure or is reflex in nature. If the latter is the case, the underlying disturbance has to be determined and treated. Attempts should be made to reduce the general and local reflex response by such methods as improving the circulation or by psychotherapy. Moreover, the patient must avoid eliciting factors.

Treatment of Lupus Vulgaris.—Richter combines the application of a tuberculin ointment with quartz lamp irradiation. In addition to concentrated tuberculin, the ointment contains killed but morphologically and chemically intact tubercle bacilli of the bovine and human types. To promote the antibody formation in the diseased area, quartz lamp irradiation was applied from a distance of 1 meter, beginning with a five minute exposure and gradually increasing by one minute each time. The surrounding areas were covered. It was assumed that the hyperemia and the resulting increase in the functional processes of the skin would increase the action of the tuberculin ointment. On the day following this treatment, a strong reaction with the signs of an acute inflammation was noted. As a rule, the treatment was repeated after five or eight days. After ten treatments a period of rest was given for from four to six weeks. If after that further treatment was necessary, a new series of treatments was started. Thus far, the author has employed the treatment only in patients with extensive and severe lesions. In two cases the treatment was a complete success; not a single lupus nodule remained and the extensive lesions had healed with a flat faintly red scar. In another case, considerable improvement was obtained. In two other paticnts only a few nodules remained after the treatment, and these were destroyed by means of electrocoagulation. Three other patients are still receiving treatment and in all the lesions show a tendency to heal. In two cases the treatment failed. The combined tuberculin and quartz lamp treatment was tried also in three cases of erythema induratum Bazin and cures resulted. A patient with papillonecrotic tuberculids on both legs was likewise cured.

Wiener klinische Wochenschrift, Vienna

47: 513-544 (April 27) 1934

*Organotherapy of Peptic Ulcer. K. Glaessner.—p. 513.
Pathogenesis and Prevention of Congenital Luxation of Hip Joint. F. Bauer.—p. 517.
Rare Forms of Carcinoma of Mamma. F. Mandl.—p. 521.
Subacute Suppurating Osteomyelitis of Atlas. B. Kecht.—p. 523.
Hydroa Vacciniforme, Porphyrinopathy, Hepatopathy. E. Urbach and J. Bloch.—p. 527.
Examination, Nutrition, Convulsions, Icterus, and Prophylaxis of Syphilis in the New-Born. R. Wagner.—p. 532.
*Allergic Disturbances of the Eye. J. Urbanek.—p. 533.

Therapy of Peptic Ulcer.—Glaessner shows that the nonspecific irritation therapy of peptic ulcer has not come up to expectations and that the results of the specific therapy that he and Loeper have introduced surpass those of other internal methods. The specific therapy consists in the subcutaneous or intramuscular injection of a neutral pepsin preparation. He gives thirty injections either subcutaneously or intramuscularly. The first ten injections are increasing amounts of pepsin, the next ten are equal amounts and the last ten are decreasing amounts. This series of treatments may be repeated after six months, because about this time relapses occur occasionally.

The pepsin therapy is combined with a dietary and a medicinal therapy. The diet is primarily lactovegetarian, but some meats and fish are permissible. The medicinal therapy consists in a dose of pure olive oil (20 Gm.) to be taken before the meals and a bismuth preparation (bismuth carbonate, or bismuth silicate) after meals. The pepsin therapy may be employed in peptic ulcers of the stomach and duodenum and in ulcers of the esophagus and of the jejunum in which there are no irreparable changes. However, in cases of deeply penetrating ulcers that have existed for a number of years, cases presenting scar formations and severe stenoses, cases in which carcinomatous degeneration is likely or cases in which perforation threatens or there is severe hemorrhage, pepsin therapy is inadvisable and surgical treatment is usually necessary. The author has employed the pepsin therapy in approximately 1,000 cases. The results were favorable in gastric and duodenal ulcers; esophageal ulcers likewise were improved, but in jejunal ulcers the results were not so favorable.

Allergic Disturbances of the Eye.—Urbanek shows that the frequent demonstrations of tubercle bacilli in disturbances of the eye, particularly in cases of uveitis, prove that tuberculosis is the cause of many diseases of the eye. The fact that in a number of cases of keratoconjunctivitis a tubercle bacillemia could be demonstrated indicates that the tuberculosis is the most prominent endogenous factor. As uncleanliness of the skin is found in the majority of cases of keratoconjunctivitis, it is likely that an exogenous noxa enters the conjunctival sac and produces the eczematous keratoconjunctivitis. The author shows the analogy between anaphylaxis and tuberculin allergy and points out that the development of scrofulous keratoconjunctivitis requires, in addition to the general sensitization of the organism (tuberculin allergy), also a second, endogenous or exogenous, factor. He thinks that the exogenous local component is more frequent than the endogenous. He points out that scrofulous keratoconjunctivitis is particularly frequent among the poorest classes of people and he thinks that neglect is a factor in its development. During the years of starvation after the war, he noted that approximately 40 per cent of eye disorders were scrofulous keratoconjunctivitis, and nearly all of these patients had skin disorders. He observed a number of cases in which, on the basis of a tuberculous disturbance, the administration of tuberculoprotein was followed by the development of uveitis not only in the eye that had been diseased formerly but also in the healthy eye.

Zeitschrift für Kinderheilkunde, Berlin

58: 143-286 (April 13) 1934

Blood Group and Dactylogram as Constitutional Signs of Patients with Poliomyelitis. Hedwig and W. Blotevogel.—p. 143.
*Glycogen Storage Disease. G. Biedermann and W. Hertz.—p. 170.
*Analysis of Forms of Growth in Glycogen Storage Disease. W. Hertz. —p. 177.
Studies on Lead Poisoning in Nurslings and Small Children: Clinical Aspects of Lead Meningism During Nursling Age. M. Kasahara.—p. 186.
Studies on Lead Poisoning in Nurslings and Small Children: Cutaneous Reaction with Sodium Sulphide in Lead Poisoning in Infants. M. Kasahara and Schun-Ichi Mii.—p. 194.
Xeroderma Pigmentosum and Rickets. G. Petényi.—p. 197.
Galvanic Irritability of Nerves in the New-Born. E. Klaften and R. Wagner.—p. 201.
Human Milk During Menstruation. J. Steinert and G. Papp.—p. 208.
Pathogenesis of Alimentary Fever. Rietschel.—p. 212.
Balances of Nitrogen, Calcium, Magnesium, Phosphorus and Iron in Children, Aged 7 or 8 Years. Anna Petrunkina.—p. 219.
Body Proportions During Growth. J. Brock and A. W. Brockmann.—p. 227.
Capillary Resistance During Childhood: Studies on Rumpel-Leede Phenomenon and on Effect of Suction Bell on Chest and Arm. J. Brock and Anneliese Malcus.—p. 237.
*Children's Eczema and External Irritations of Skin. T. Becker, S. Bornstein and H. Finkelstein.—p. 253.
Normal Values of Sedimentation Speed of Erythrocytes During First Period of Life. F. Schuricht.—p. 272.

Glycogen Storage Disease.—Biedermann and Hertz describe two cases of glycogen storage disease in children of school age. One of the boys was almost dwarfish; he had a eunuchoid accumulation of fat at the pubic eminence, and repeated bone fractures from slight causes indicated that there was a calcium deficiency of the skeleton. In the other one, the inhibition of the growth was less noticeable and the obesity involved the trunk. The urine was practically normal in both cases. It was always free from sugar; urobilin and urobilinogen were never increased and bilirubin was absent. Microscopic examination of the feces and test meals revealed no disturbances of the digestive function. The stability of the serum colloids of the blood was altered, and the sedimentation speed of the erythrocytes was enormously increased. The width of Weltmann's flocculation band was changed and the fibrin content of the plasma was reduced. The authors point out that the history of the parents of children with glycogen storage disease frequently reveals treated syphilis and that other relatives occasionally show degenerative psychic changes. The patients themselves have never been found to be syphilitic.

Growth Disturbances in Glycogen Storage Disease.—Hertz shows that in glycogen storage disease there occur various growth disturbances. There are the aspects of a dystrophy resulting from carbohydrate hunger and the aspects of incretory disturbances. These two types of disturbances may occur alone or together. The incretory disorders known thus far indicate a disturbance in the function of the hypophyseal mesencephalic system, but anatomic changes of the hypophysis have not yet been discovered in glycogen storage disease. However, local hypophyseal disturbances frequently are absent also in adiposogenital dystrophy and in a form of dwarfism, which is now widely assumed to be of hypophyseal origin. The author concludes that a familial constitutional deficiency of the endocrine system and of the organism on the whole is highly probable in glycogen storage disease but that the high incidence of hypophyseal and cerebral manifestations nevertheless seems to indicate a circumscribed neuro-endocrine disorder.

Children's Eczema and External Irritations.—Becker and his associates employed various tests without being able to demonstrate a primary increased vasomotor sensitivity as a characteristic of the skin of eczematous children. From the localization of the eczema and from its dependence on a stronger blood perfusion, it could be determined that slight external irritations, which in noneczematous persons remain below the threshold of stimulation, produce a secondary irritation of the capillaries in eczematous persons. The resulting hyperemia is considered to be important in the pathogenesis of eczematous changes. The cantharidin test was performed in order to determine whether a superficial erosion of the epidermis heals differently in the eczematous person than in the one without eczema. In seborrheic dermatitis, it revealed retardation of the healing process and increased desquamation, congestion and infiltration. The dermatosis and the reaction could be modified by alimentary measures, and thus the underlying metabolic nature of the cutaneous disturbance was revealed. The reactions observed in eczema indicated that, aside from the pathognomonic congestive-exudative component, a dyskeratotic factor is involved. In eczema the reaction is not of primary alimentary origin, as it is in seborrheic dermatitis, but is caused by a nutritional disturbance produced by inflammatory impregnation of the epidermis, which becomes more evident when the skin is inclined to desquamation. In neurodermatitis the cantharidin reaction is frequently weak and similar to that of the noneczematous person. This is due to the spastic condition of the cutaneous vessels, as the result of which a single irritation by cantharidin is not capable of producing the permanent hyperemia, which in turn is the basis for the pathologic form of the reaction. Normal reactions are obtained in cases of milk crusts, supporting the opinion that the condition is localized. The authors think that the epidermis is impaired by the exudation and that the products of the disordered epidermal metabolism increase the irritability of the vessels.

Zentralblatt für Gynäkologie, Leipzig

58: 961-1024 (April 28) 1934

*Death from Eclampsia. P. Caffer.—p. 962.
Delivery of Twin Monsters Fused at the Thorax. Å Rydén.—p. 972.
*Rapidity of Exchange of Amniotic Fluid in Human Subjects. G. Albano.—p. 973.
Prognosis of Manual Detachment of Placenta and of Inspection of Uterus Following Delivery in Clinic and Home. J. Granzow.—p. 981.
Sarcoma of Uterine Isthmus: Remarks on Pathology of Isthmus. R. Joachimovits.—p. 988.

Death from Eclampsia.—Caffier thinks that death in eclampsia may be due to: (1) asphyxia of central origin, which

in turn is caused by vascular spasms in the region of the respiratory center; (2) involvement of the heart in the tonic phase of the eclamptic attack; (3) spasm of the coronary vessels of the type that causes death in angina pectoris; (4) shock, caused either by an alteration of the center of the vagus by vascular spasm in the medulla oblongata or by an irritation of the pulmonary branches of the vagus during the tonic phase of the eclamptic attack. The postmortem examination of a woman who had died during the attack showed the heart in maximal systole. This would indicate the second mode of death listed by the author. Two other patients did not die during the eclamptic attack, but a severe cardiac disturbance developed with the eclamptic attack and was the cause of death. The postmortem examination revealed pathologic changes in the cardiac conduction system. The author thinks that the heart should be given careful attention during an eclamptic attack. He discusses a group of fatal cases of eclampsia in which characteristic renal changes were found. In all of them the amount of the functioning renal parenchyma was reduced so that practically only one kidney was functioning. The author thinks that the eclampsia takes an especially severe course in such cases.

Rapidity of Exchange of Amniotic Fluid.—In studying the exchange of the amniotic fluid, Albano injected 6 mg. of sodium phenolsulphonphthalein into the amniotic cavity. Since the phenolsulphonphthalein begins to appear in the maternal blood about one hour after the injection, observations on the resorption were begun at this time. Specimens of amniotic fluid were withdrawn at intervals of several hours and the quantity of phenolsulphonphthalein was determined by means of the colorimeter. The studies were made on women who were near the end of pregnancy; some were healthy and some had polyhydramnios. However, the author thinks that the studies should be made also during the earlier period of pregnancy (up to the fourth month). His investigations revealed that toward the end of pregnancy the capacity of the amniotic cavity is 675 cc. The resorption of the amniotic fluid takes place with a rapidity of 47.25 cc. per hour or 0.783 cc. per minute. The entire quantity of fluid is renewed in about 14.31 hours. It was found that the values determined by theoretical computation correspond to the real values, and thus it is possible to determine the resorption value at any moment of the observation period. The author thinks that the knowledge of the physiologic condition may serve as a basis in the study of pathologic conditions in the exchange of the amniotic fluid and may aid in the early diagnosis of such disorders as polyhydramnios, decompensated cardiopathies, tuberculosis, death of the fetus and gestosis.

Acta Obstetricia et Gynec. Scandinavica, Helsingfors

14: 1-114 (No. 1) 1934

A Series of One Hundred Cesarean Sections. K. A. Hoffström.—p. 1.
Some Results of Extraperitoneal Cesarean Section. E. Brattström.—p. 37.
Four Cases of Interstitial Tubal Pregnancy in which Operation was Performed Before Rupture: Contributions to Early Diagnosis. M. Schroderus.—p. 48.
*Cutaneous and Mediastinal Emphysema in Parturient Women. A. O. I. Turunen.—p. 76.
*Occurrence of Follicle Stimulating and Lutelnizing Factors of Anterior Pituitary-Like Principle in Urine of Women Castrated by Roentgen Treatment or by Operation. H. C. A. Lassen and E. Brandstrup.—p. 89.

Cutaneous and Mediastinal Emphysema in Parturient Women.—Turunen reports two cases of young, healthy primiparas in whom, after comparatively easy deliveries, cutaneous emphysema developed in the upper part of the body, especially on the right side. In one case a roentgenoscopy of the thorax showed that the mediastinum likewise was emphysematous. This is the first report in which this condition has been noted with cutaneous emphysema. Clinical examination revealed that the cardiac dulness was absent for several days, furnishing additional proof that mediastinal emphysema existed. It was probably the result of a subpleural tearing of the pulmonary tissue. Consequently it may be assumed that, in cases of cutaneous emphysema developing in connection with delivery, the air comes from a pulmonary rupture, enters the mediastinum and gains access to the skin. Since this complication is extremely rare and since it could be caused by the amount of exertion necessary to normal labor, it must be assumed that anomalies of the respiratory tract or abnormal weakness of the pulmonary tissues favor its development. The author thinks that mediastinal emphysema may occur more frequently during delivery than is generally assumed but that it rarely is extensive enough to produce cutaneous emphysema.

Follicle Stimulating and Luteinizing Factors of Anterior Pituitary Like Principle in Urine of Castrated Women.—In a series of women who had been subjected in thirty-six instances to roentgen castration and in ten instances to surgical castration, Lassen and Brandstrup made a total of 436 tests for anterior pituitary-like principle in the urine. The tests were made once a month for from three to thirty-one months. With the technic employed, anterior pituitary-like principle could be demonstrated only when 1 liter of urine contained in excess of 400 mouse units. In the women who had been castrated with roentgen rays, the reaction for the follicle-stimulating factor of anterior pituitary-like principle was positive in approximately 30 per cent of the urine specimens (343) examined. The reaction for the luteinizing factor of anterior pituitary-like principle was positive in 7 per cent of the specimens. The incidence of the reaction for the former factor was practically the same throughout the observation period, but the reaction for the latter factor was positive most frequently during the first half year after castration. Of the roentgen castrates, 92 per cent excreted the follicle stimulating factor of anterior pituitary-like principle in amounts of over 400 mouse units per liter at some time during the observation period, while a similar amount of the luteinizing factor of anterior pituitary-like principle was detected in 44 per cent of the cases. In the surgical castrates a positive reaction for the follicle-stimulating factor of anterior pituitary-like principle was obtained in about half the urine specimens examined, while the reaction for the luteinizing factor of anterior pituitary-like principle was positive in about 9 per cent of the specimens. The reactions for anterior pituitary-like principle are most frequent during the first six months after the operation. All ten patients excreted at some time or other after the operation the follicle-stimulating factor of anterior pituitary-like principle in amounts of more than 400 mouse units per liter of urine, most of them within the first half year after the operation. Six patients gave a positive reaction for the luteinizing factor of anterior pituitary-like principle within that period. In suitable control material less than 15 per cent of the cases gave positive reactions for the follicle-stimulating factor of anterior pituitary-like principle and the reaction for the luteinizing factor of anterior pituitary-like principle was positive in from 1 to 2 per cent of the cases. Tests were made also (one in each case) on sixty-three women of the menopausal age, and the reaction for the luteinizing factor of anterior pituitary-like principle was positive in 14 per cent of the cases.

Ugeskrift for Læger, Copenhagen

96: 359-394 (April 5) 1934

Evaluation of Increased Blood Pressure: C'en. E. Roaling.—p. 359.
Evipan-Sodium Anesthesia: Its Applicability in Dental Practice. J. M. Skaarup and I. Osiier.—p. 367.
*Adipose Necrosis in the New-Born. H. Harpøth.—p. 369.

Adipose Necrosis in the New-Born.—Harpøth reports a case of necrosis of the fatty tissue in an infant. Subfebrile temperature and a disturbance of the skin and subcutaneous tissues of the buttocks were noted two or three days after birth, and a slowly progressive dry necrosis with undermined edges. Death occurred after seven weeks. There was infiltration of the skin 5 cm. outward from the edge of the necrosis. The author says that sclerema neonatorum includes sclerema adiposum, sclerema edematosum and necrosis adiposum neonatorum; the first two diseases are excluded in this case. The results of the microscopic examination agreed in the main with those in Gelbjerg-Hansen's case. The condition was characterized by indistinct boundaries of fat cells and reactive infiltration of giant cells. This is believed to be the second report of superficial adipose necrosis.